Cost of Manpower Estimating Tool

Version 1.1

Active Duty Component Tutorial

Naval Center for Cost Analysis

Note: Screen captures depicted in this tutorial are applicable to COMET Version 1.1 only. Download COMET Version 1.1 from:

http://www.ncca.navy.mil/comet/download.htm

Table of Contents

COMET Overview

COMET (Cost of Manpower Estimating Tool) Version 1.1 is a PC-based tool that provides Operating and Support (O&S) cost estimates of Active, Reserve, and Civilian Components of Navy manpower to analysts who must make decisions about various manpower-to-manpower or manpower-to-hardware tradeoffs.

COMET incorporates parameters from the NCCA's trilogy of Cost-of-a-Sailor (COAS) studies (http://www.ncca.navy.mil/comet/cna-stud.htm) in a PC-based, 32-bit, Windows 95 application that installs on your PC in minutes.

This tutorial is designed to give the user a working familiarity with the Active Component only. It provides both a step-by-step tour of the model's functions and a simulated manpower costing exercise. Sample cost files, unit files, platforms, and projects are included to aid in the exercise. The Active Component user and operations manuals contain more information about model methodology and data sources and can be downloaded at http://www.ncca.navy.mil/comet/download.htm.

Features and Options

The COMET model was designed with flexibility in mind, with the following features included:

- ❑ COMET costs are customizable, allowing you to include only those costs pertinent to your cost analysis.
- ❑ COMET costs are comprehensive, including both the direct costs (Military Personnel, Navy (MPN)) of manning billets and the variable indirect costs (MPN and Operations and Maintenance, Navy (OMN)) associated with acquiring, training, locating, and supporting those personnel. Also included are other non-Navy costs such as Montgomery GI Bill (direct/MPN) and DoD Health Care (variable indirect/OMN). Note: *Only the Active Component includes variable indirect costs.*
- ❑ COMET costs are granular, varying across skills, paygrade, and geographic location (civilians).
- ❑ Users can easily customize specifications to a particular cost exercise.
- ❑ The Windows 95 environment allows users to easily share data with other applications.
- ❑ The model's output can be exported to spreadsheet applications or printed to hard copy.

The COMET model allows the user to do four things:

1. *Specify Which Costs to Include and Exclude In an Analysis*
   - ❑ COMET allows the user to customize costs to fit each costing exercise.

2. *Aggregate Manpower By Skill and Paygrade*
   - ❑ COMET allows the user to specify a suite of enlisted and officer manpower.
   - ❑ Enlisted manpower can be specified at the Rating/Enlisted Management Community (EMC) and paygrade level.
   - ❑ Officer manpower can be specified at the Designator and paygrade level.
3. *Estimate Life Cycle Costs (LCC)*
   - ❑ The user specifies the project duration, discount rate, and inflation scenario.
4. *Use the Delta Analysis Option to Compare Projects*

Installation Requirements

- ❑ Windows 95 Operating System
- ❑ 8 Mb Memory Required (16 Mb Recommended)
- ❑ Disk space requirements:
  - Active Component -10 Mb
  - Reserve Component - 10 Mb
  - Civilian Component - 10 Mb

COMET (Version 1.1) can be installed from the NCCA web site (http://www.ncca.navy.mil/comet/download.htm), diskettes, or a CD-ROM.

To install the Active Component Tutorial from the NCCA web site, download the .ZIP file and "unzip" it to your desired target directory.

COMET Training Tutorial

Getting Started

To start the model:

- ❑ From the **Start** menu, choose *Programs*, choose *COMET*, and then select *COMET_Active_Component*.

You should now see the main **COMET (Active Component)** menu.

Overview of Menu Structure

The main menu options shown across the top of the screen are:

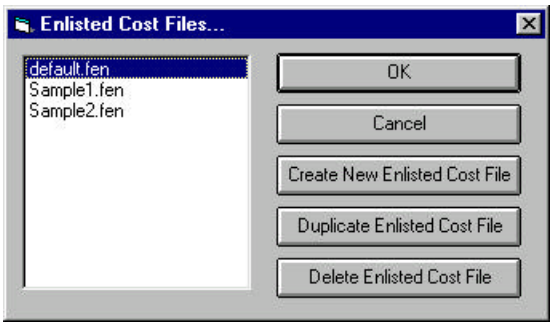
- **File**
- **Data**
- **Edit**
- **LCC**
- **Help**

The File Menu

In addition to allowing you to exit, the **File** menu lets you view, print, and export detailed cost data for the enlisted and officer components.

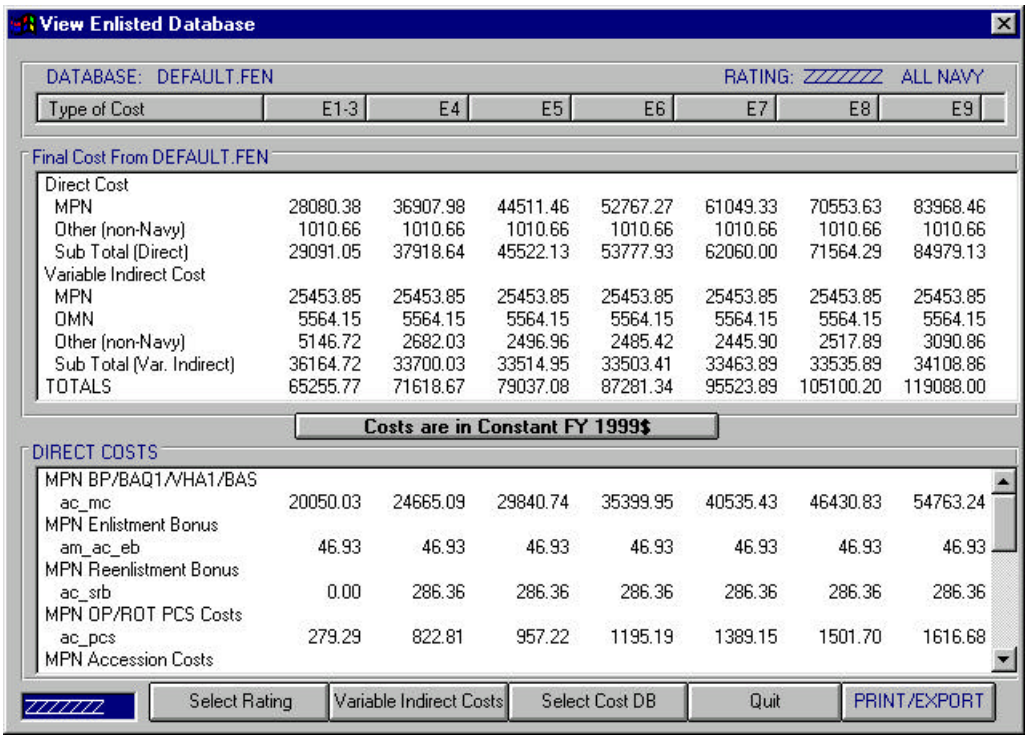
View Enlisted Costs

- ❑ On the **File** menu, select *View Enlisted Costs.*



You should see three cost files displayed. Enlisted cost files always have a ".fen" extension.

- ❑ Select *default.fen* and click *OK*.

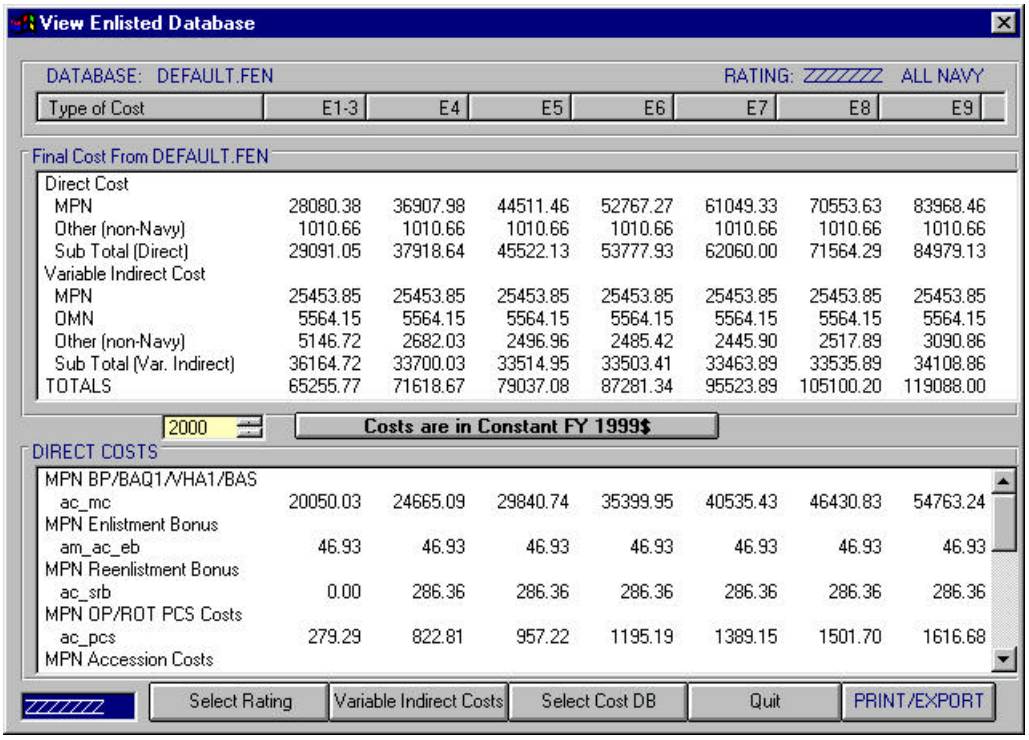


Now you are looking at a summary and detailed view of enlisted costs. By default, COMET shows you the **ALL-NAVY (ZZZZZZZ)** rating. The current rating appears in both the upper right and lower left corners of the screen display. Also notice that the current cost file name appears just below the Windows title bar in the upper left corner.

Costs are automatically displayed in constant, current fiscal-year dollars the first time you view costs. In this example, the **Costs are in Constant FY 1999 $**.

- ❑ To change the base year for costs, click on the button labeled *Costs are in Constant FY 1999 $* in the center of the screen.
- ❑ Choose fiscal year *2000* from the drop-down window.
- ❑ Double-click on *2000*.

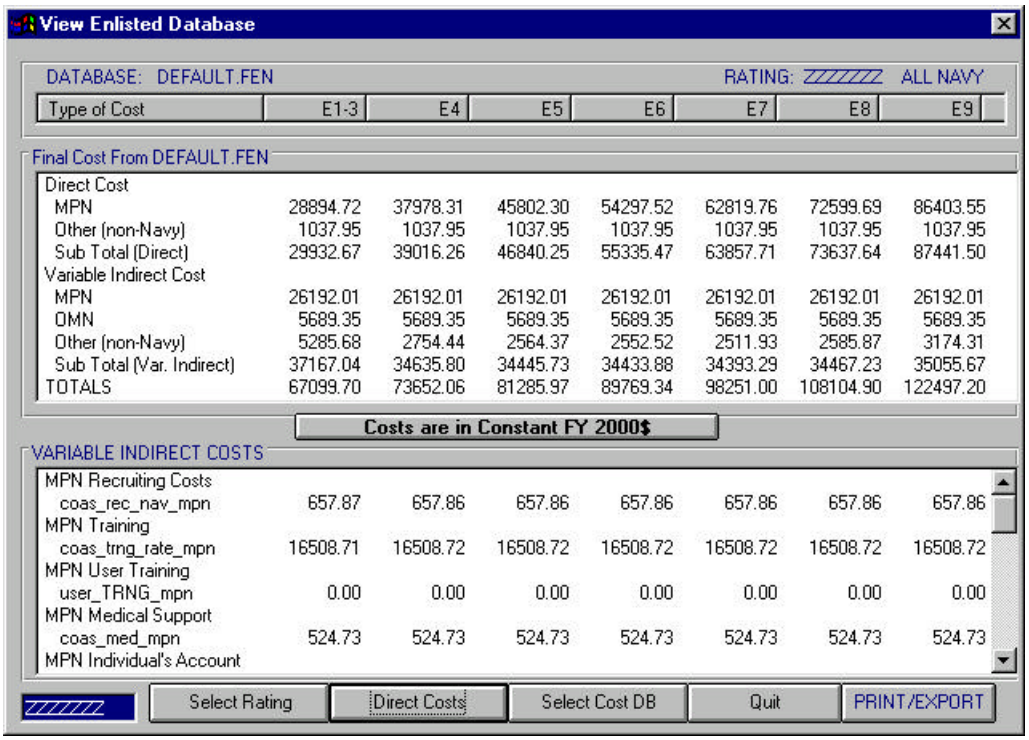
Costs will be updated immediately on the display to the new base year.



The upper window (**Final Cost From DEFAULT.FEN**) is the cost summary. It shows the total, annual per-billet cost by paygrade and appropriation category. Note that it is also broken out by direct costs and variable indirect cost.

The lower window (**DIRECT COSTS**) shows cost details for each of the direct cost items that are totaled in the upper window under *Direct Cost/Sub Total (Direct).* Additionally, the last entry in the itemizations is an FY 1997 inventory of the personnel in the selected rating.

- ❑ To view a similar itemization of *Variable Indirect Costs*, click the second button from the left at the bottom.



The **Variable Indirect Costs** will appear in the lower window with a vertical scroll bar on the right that allows you to see the additional variable indirect default cost elements.

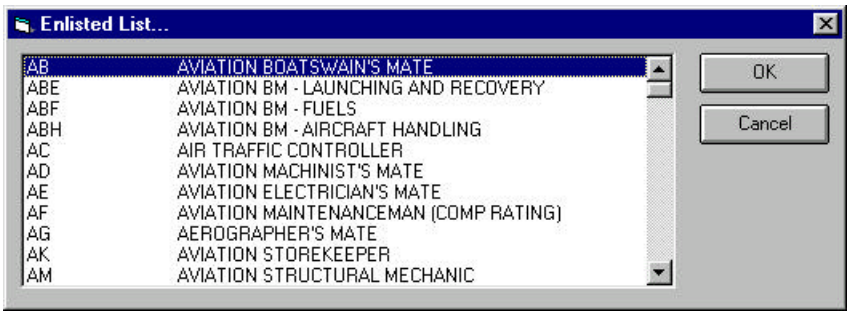
Each detailed cost element is labeled (e.g., **Recruiting Costs** under **MPN COST ELEMENTS**). On the line immediately following each label, you'll see the name of the data field providing the detailed cost and the annual billet cost for that element by paygrade. For the default cost file, recruiting MPN costs are captured by **coas_rec_nav_mpn** (all-Navy Cost-of-a-Sailor (COAS) estimates).

- ❑ Click on the *Select Cost DB* button at the bottom of the screen to select a different file.
- ❑ Choose *Sample2.fen*.
- ❑ Click on *Variable Indirect Costs.*

Recruiting costs are now represented by **coas_rec_rate_mpn**, which is the rating-specific estimate of recruiting costs.

For the ZZZZZZZ rating (all-Navy average), this amount is the same as the default.

- ❑ To see a difference, click the *Select Rating* button.

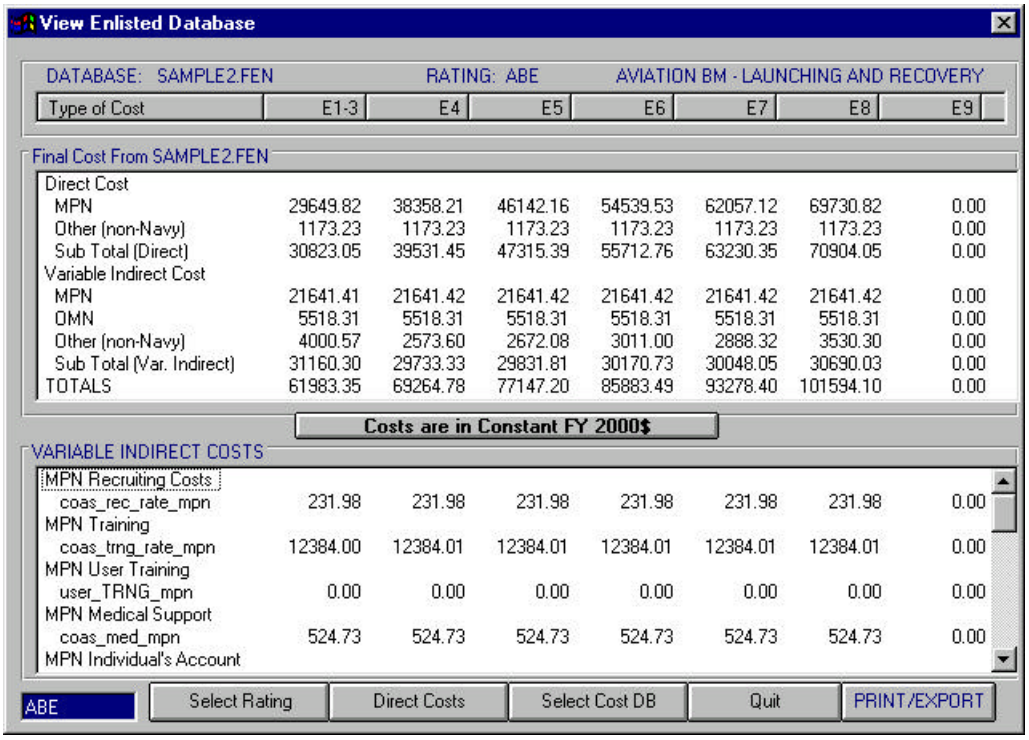


The **Enlisted List** dialog box appears. Take a second and scroll up and down to see the full list of ratings and Enlisted Management Communities (denoted by *EMC* after the line entry). This list will appear in a number of other places.

- ❑ Select *ABE AVIATION BM - LAUNCHING AND RECOVERY* from the list and click *OK*.

The **View Enlisted Database** screen will reappear. Notice that the **ABE** rating you selected is now in the lower left corner (and upper right corner) of the screen.

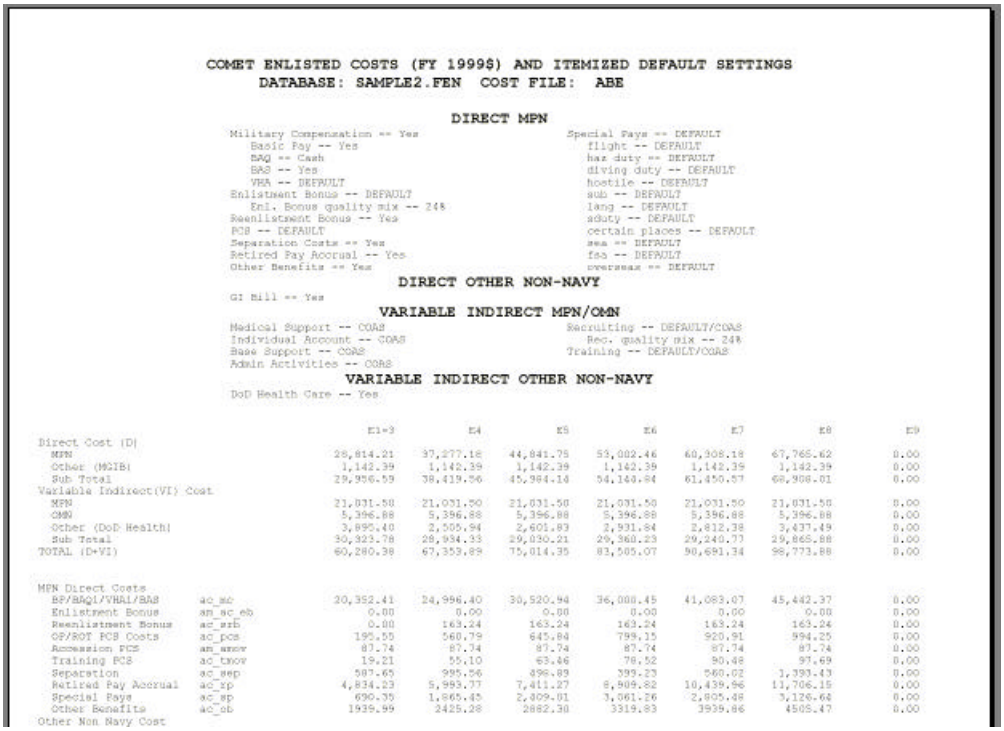
- ❑ Then, click *Variable Indirect Costs.*



You can print or export this detailed cost data from here. This can only be done on a per-rating basis.

- ❑ Click the *PRINT/EXPORT* button.

If you select **Print**, your system's standard print dialog box appears, allowing you to follow your normal print procedure. The printout will look something like the example below:



COMET ENLISTED COSTS (FY 1999$) AND ITEMIZED DEFAULT SETTINGS
DATABASE: SAMPLE2.FEN COST FILE: ABE

DIRECT MPN

Military Compensation -- Yes
Basic Pay -- Yes
BAQ -- Cash
BAS -- Yes
VHA -- DEFAULT
Enlistment Bonus -- DEFAULT
Enl. Bonus quality mix -- 24%
Reenlistment Bonus -- Yes
PCS -- DEFAULT
Separation Costs -- Yes
Retired Pay Accrual -- Yes
Other Benefits -- Yes

Special Pays -- DEFAULT
flight -- DEFAULT
haz duty -- DEFAULT
diving duty -- DEFAULT
hostile -- DEFAULT
sub -- DEFAULT
lang -- DEFAULT
sduty -- DEFAULT
certain places -- DEFAULT
sea -- DEFAULT
fas -- DEFAULT
overseas -- DEFAULT

DIRECT OTHER NON-NAVY

GI Bill -- Yes

VARIABLE INDIRECT MPN/OMN

Medical Support -- COAS
Individual Account -- COAS
Base Support -- COAS
Admin Activities -- COAS

Recruiting -- DEFAULT/COAS
Rec. quality mix -- 24%
Training -- DEFAULT/COAS

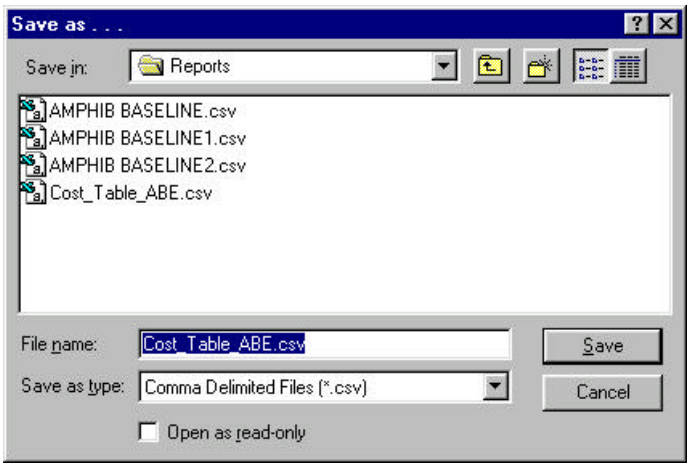
VARIABLE INDIRECT OTHER NON-NAVY

DoD Health Care -- Yes

		E1-3	E4	E5	E6	E7	E8	E9
Direct Cost (D)								
MPN		28,814.21	37,277.18	44,841.75	53,002.46	60,908.18	67,765.62	0.00
Other (MCIB)		1,142.39	1,142.39	1,142.39	1,142.39	1,142.39	1,142.39	0.00
Sub Total		29,956.59	38,419.56	45,984.14	54,144.84	61,450.57	68,908.01	0.00
Variable Indirect(VI) Cost								
MPN		21,031.50	21,031.50	21,031.50	21,031.50	21,031.50	21,031.50	0.00
OMN		5,396.88	5,396.88	5,396.88	5,396.88	5,396.88	5,396.88	0.00
Other (DoD Health)		3,895.40	2,505.94	2,601.83	2,931.84	2,812.38	3,437.49	0.00
Sub Total		30,323.78	28,934.33	29,030.21	29,360.23	29,240.77	29,865.88	0.00
TOTAL (D+VI)		60,280.38	67,353.89	75,014.35	83,505.07	90,691.34	98,773.88	0.00
MPN Direct Costs								
BP/BAQ1/VHA1/BAS	ac_mc	20,352.41	24,996.40	30,520.94	36,088.45	41,083.07	45,442.37	0.00
Enlistment Bonus	am_mc_eb	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Reenlistment Bonus	ac_mrb	0.00	163.24	163.24	163.24	163.24	163.24	0.00
OP/ROT PCS Costs	ac_pcs	195.55	560.79	645.84	799.15	920.91	994.25	0.00
Accession PCS	am_amov	87.74	87.74	87.74	87.74	87.74	87.74	0.00
Training PCS	ac_tmov	19.21	55.10	63.46	78.52	90.48	97.69	0.00
Separation	ac_sep	587.65	995.56	696.89	399.23	560.02	1,393.43	0.00
Retired Pay Accrual	ac_rp	4,834.23	5,993.77	7,411.27	8,909.82	10,439.96	11,706.15	0.00
Special Pays	ac_sp	690.35	1,865.45	2,809.01	3,061.26	2,805.48	3,126.64	0.00
Other Benefits	ac_ob	1939.99	2425.28	2882.30	3319.83	3939.86	4505.47	0.00
Other Non Navy Cost								

Let's demonstrate the Export option next.

- ❑ Click the *EXPORT* button.

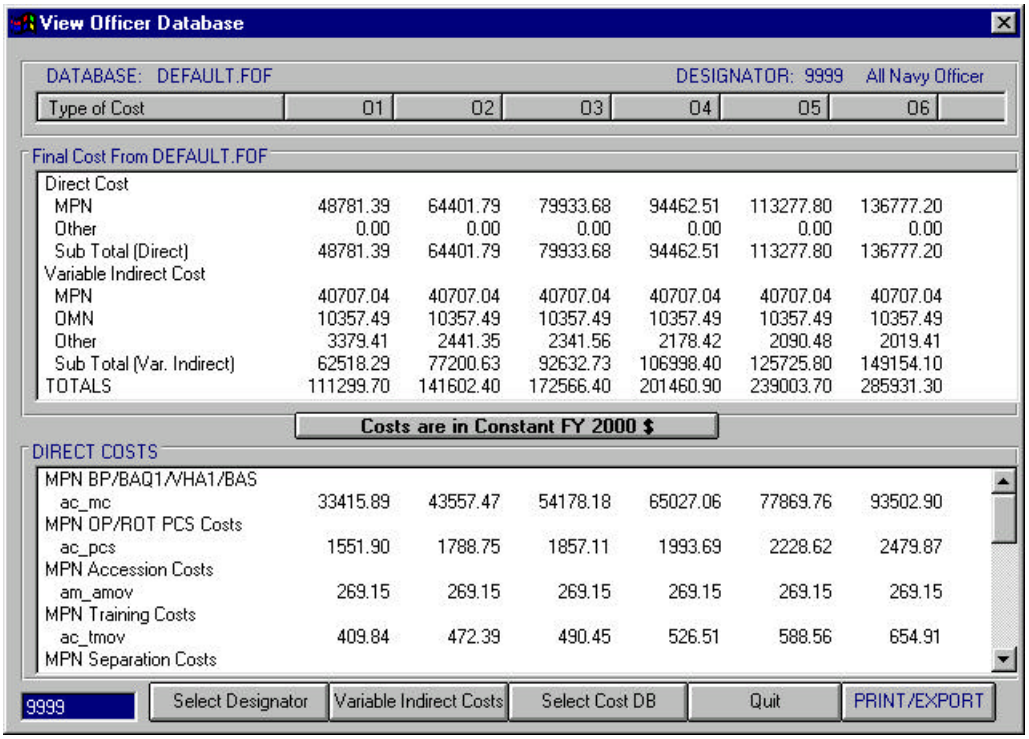


By default, COMET will supply a file name, but you may change that if you wish. The exported file is a comma-delimited file that will import easily into Excel or another spreadsheet application.

- ❑ Click *Quit*.

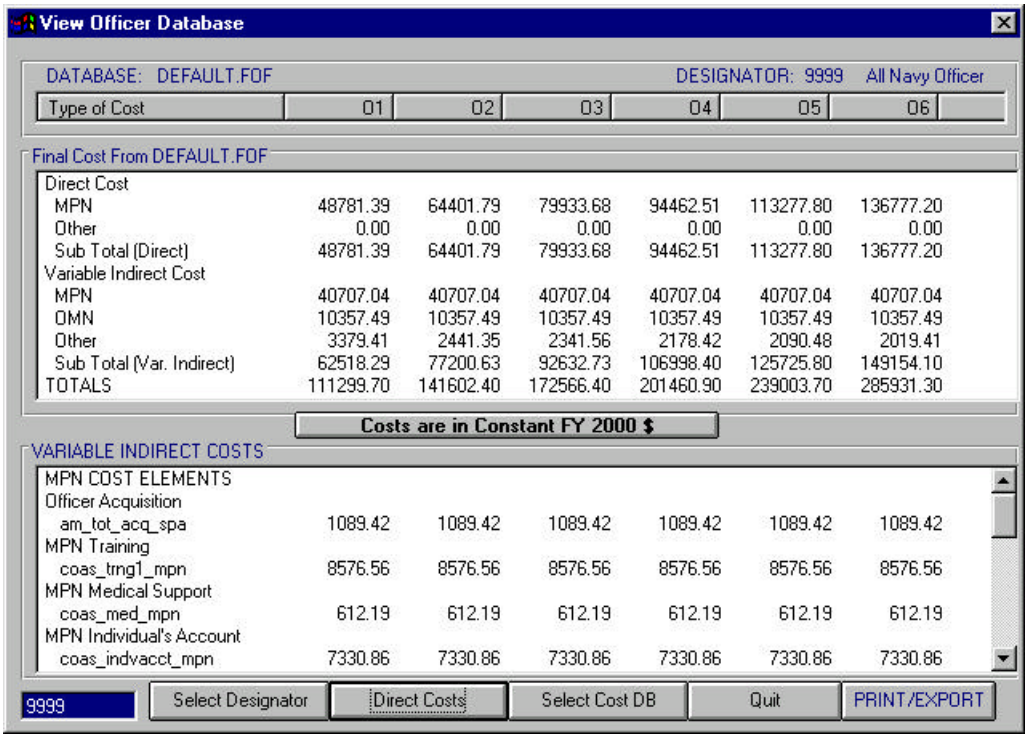
View Officer Costs

- ❑ From the **File** menu, select *View Officer Costs.*
- ❑ Select *default.fof* and click *OK*.



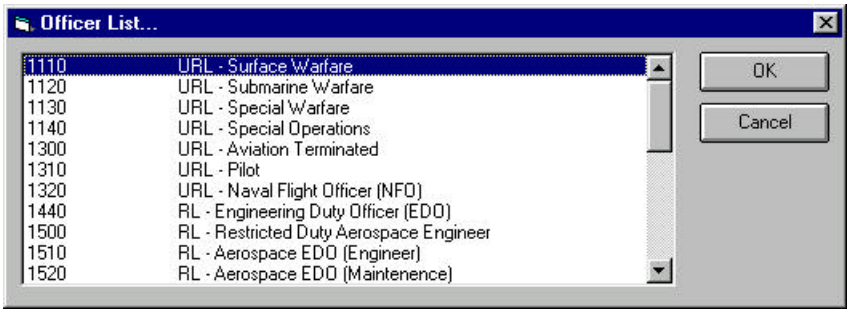
As you can see, the setup is very similar to the enlisted file. Some of the detailed costs, however, are different.

- ❑ Click on *Variable Indirect Costs* at the bottom, left-center of the screen.



Notice that the first category in the bottom half of the screen is **Officer Acquisition** costs, rather than recruiting costs. These costs are limited entirely to pre-commissioning student pays and allowances. There are some fairly significant obstacles to including additional pre-commissioning costs. Some, such as ROTC scholarships, are easy to identify. Other costs, like Naval Academy costs, can be identified, but it would be difficult to separate the variable portion from the fixed portion. However, the structure exists in the model to incorporate more detailed costs in the future.

- ❑ Click *Select Designator* at the bottom half of the screen. In this screen, **Designators** replace **Ratings**, but the functions here are the same.



The **Officer List** dialog box appears. Take a second and scroll up and down to see the full list. As with the enlisted list, this list will appear in a number of other places.

Take some time now to explore this screen and its functions, similar to what you did with the enlisted cost files.

❑ When you are finished, click *Quit*.

The Data Menu

The **Data** menu allows you to import new default cost data when it is provided by NCCA. A separate utility also permits you to import COMET cost files, units, platforms, and projects from another user. If you're interested in "Getting Started" as quickly as possible, skip this section (The Data Menu) and proceed to page 16, where we discuss The Edit Menu and begin customizing costs in COMET. Return to this section after you've become comfortable with the other aspects of the software.

Import New Officer, Enlisted, and Active Databases

Periodically, NCCA will provide updated Enlisted and Officer Cost files (*default.fen* and *default.fof*). Additional supporting data is contained in the *Active.mdb* database. When an update is issued, it will contain the latest version of each of these files.

❑ When you receive an update, select the appropriate option from the **Data** menu.

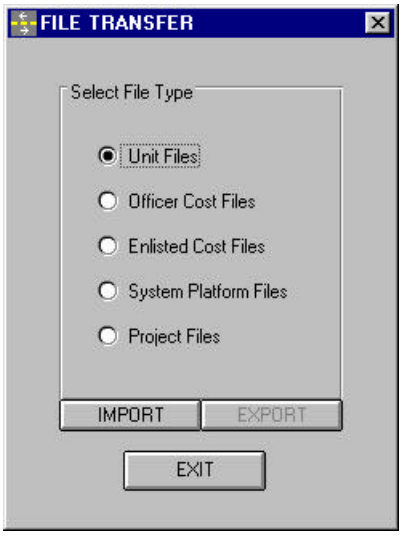
❑ Locate the new file using the file box and browse (e.g., *A:\default.fen* if imported from a floppy disk).

The system will automatically import the file to the Active Component working directory.

File Transfer

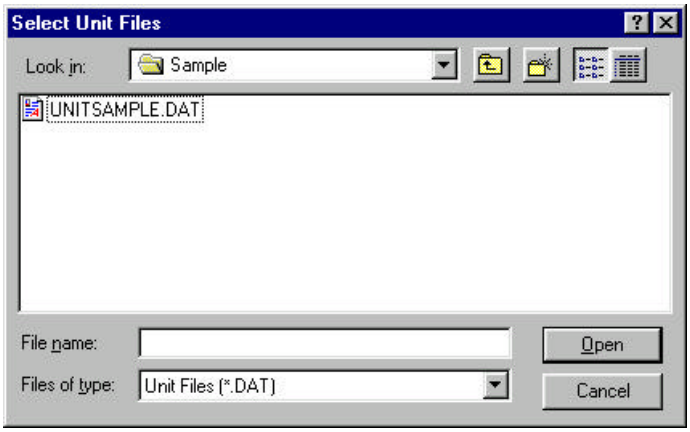
The final option allows users to share COMET data.

❑ From the **Data** menu, choose *File Transfer*.



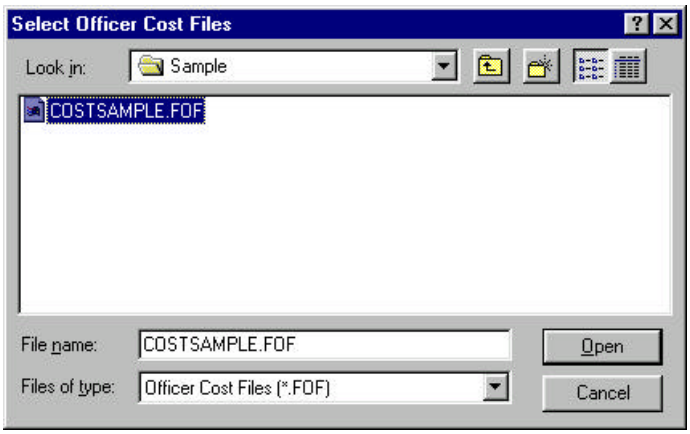
From this screen, you may choose to transfer **Unit Files, Officer Cost Files, Enlisted Cost Files, System Platform Files** or **Project Files**. The first three options simply transfer the selected file and are imported by the recipient. Let's start by importing a unit file.

- ❑ Make sure the **Unit Files** option is selected, and then select *IMPORT*.
- ❑ Browse to the **Sample** folder, which is found in routine installations under the **Active Component** folder.
- ❑ Select the file *UNITSAMPLE.DAT*, either by double-clicking on the file name or single-clicking and clicking the *OPEN* button.



This file will be imported and added to your **Active Component Unit File** list. In practice, you may receive this file on a floppy disk, as an e-mail attachment, or via a local area network. In any of these cases, simply browse to file location and select the proper unit. We'll use the same procedure to import some sample cost files.

- ❑ Under the **Data** menu, choose *File Transfer*, and then *Officer Cost Files.*
- ❑ Click *Import*.
- ❑ Browse to the **COMET\Active Component\Sample** folder.
- ❑ Select *COSTSAMPLE.FOF*.



The sample officer cost file is added to your **Active Component** folder.

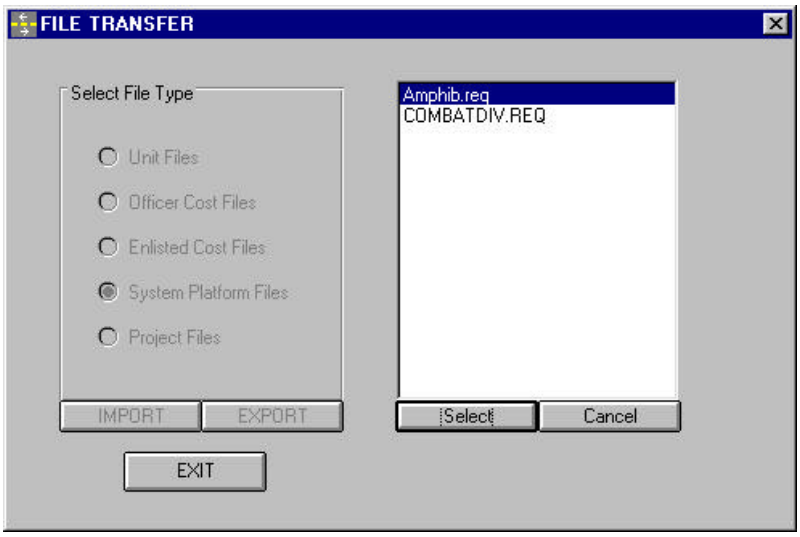
Next, we'll repeat the procedure for a sample enlisted cost file.

- ❑ Under the **Data** menu, choose *File Transfer*, and then *Enlisted Cost Files.*
- ❑ Click *Import*.
- ❑ Browse to the **COMET\Active Component\Sample** folder.
- ❑ Select *COSTSAMPLE.FEN*.

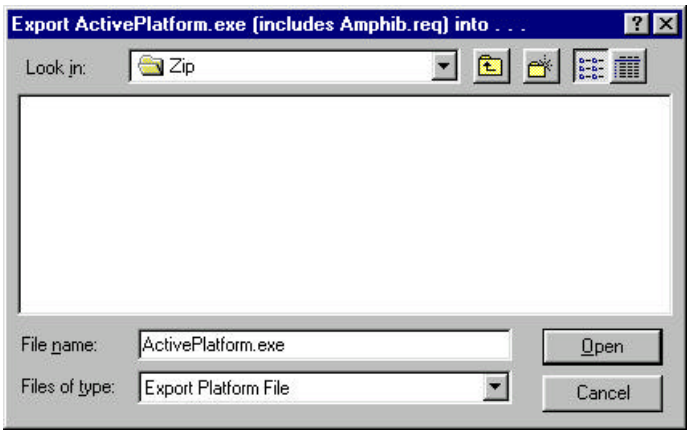
The sample enlisted cost file is added to your Active Component folder.

The final two transfer options are slightly more complicated. System platforms and projects (as you will learn later in the tutorial) have supporting files associated with them. In order to share a platform or project with another COMET user, you must first export the appropriate information. COMET handles this process automatically.

- ❑ Under the **Data** menu, choose *File Transfer*, and then *System Platform Files.*
- ❑ Click *Export*.
- ❑ Select the platform *Amphib.req*.



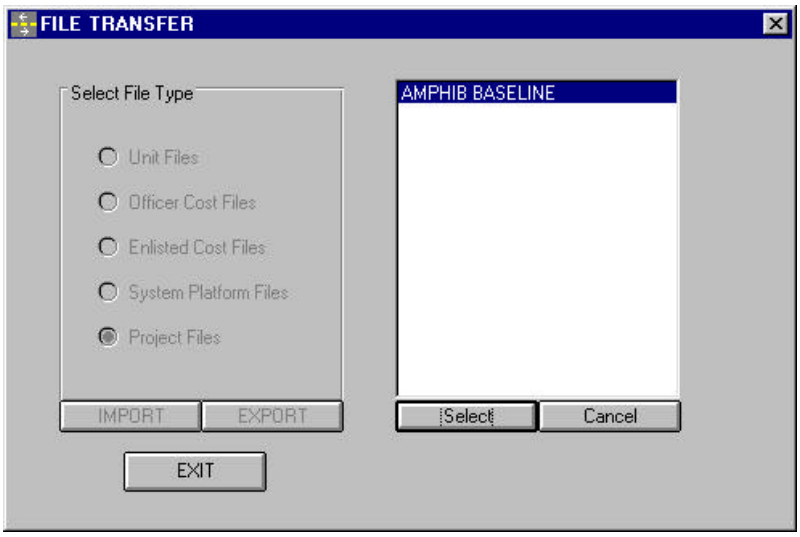
- ❑ Browse to the **COMET\Active Component\Zip** folder.
- ❑ Click *Open*.



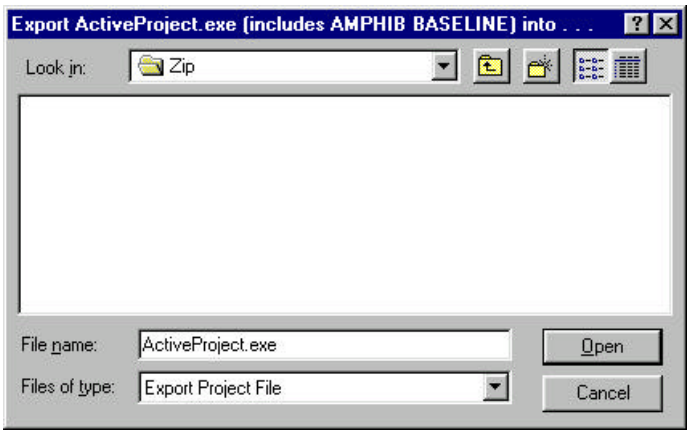
COMET will create a file called **ActivePlatform.exe** that contains all of the information necessary to share the platform with another user.

Next, we'll export a project.

- ❑ Under the **Data** menu, choose *File Transfer*, and then *Project Files.*
- ❑ Click *Export*.
- ❑ Select the project *AMPHIB BASELINE.*



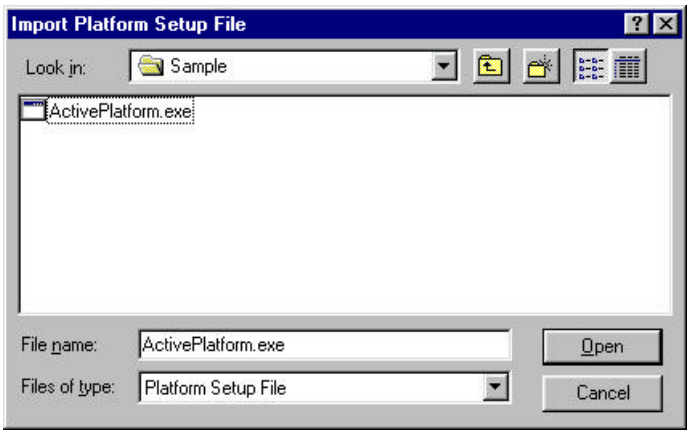
- ❑ Browse to the **COMET\Active Component\Zip** folder.
- ❑ Click *Open*.



COMET will create a file called **ActiveProject.exe** that contains all of the information necessary to share the project with another user.

Finally, we can import platforms and projects. You can only do this if another user has exported a platform or project and shared it with you.

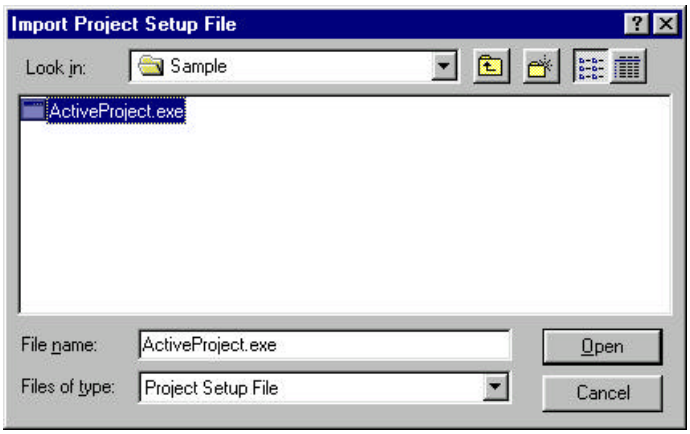
- ❑ Under the **Data** menu, choose *File Transfer*, and then *System Platform Files.*
- ❑ Click *Import*.
- ❑ Browse to the **COMET\Active Component\Sample** folder. It contains a previously exported platform.
- ❑ Choose *ActivePlatform.exe* and click *Open*.



You have imported a platform called **PLATSAMPLE.REQ**, along with its associated unit files.

The procedure for importing a project file is similar.

- ❑ Under the **Data** menu, choose *File Transfer*, and then *Project Files.*
- ❑ Click *Import*.
- ❑ Browse to the **COMET\Active Component\Sample** folder. It contains a previously exported project.
- ❑ Choose *ActiveProject.exe* and click *Open*.



You have imported a platform called **PROJSAMPLE** along with its associated unit, cost, and platform files.

The Edit Menu

Through the **Edit** menu, the user changes how COMET aggregates billet costs.

Before you change anything, you must select an enlisted cost file and/or an officer cost file to edit. If you pull down the **Edit** menu, notice that the **Edit Enlisted Costs** and **Edit Officer Costs** options are dimmed. They won't be undimmed until you select a cost file.

Select Enlisted Cost DB to Edit

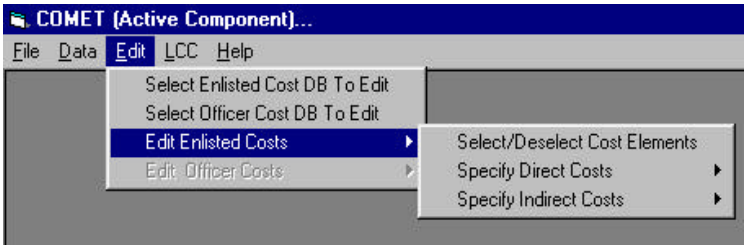
❑ Choose *Select Enlisted Cost DB to Edit*.

The same **Enlisted Cost Files** dialog box from the **File** menu appears. Notice that if you select *default.fen*, COMET will not let you edit it. The default file settings cannot be modified. If you choose it, you will receive an error message.

❑ Select *SAMPLE2.FEN*. Click *OK*.

Edit Enlisted Costs

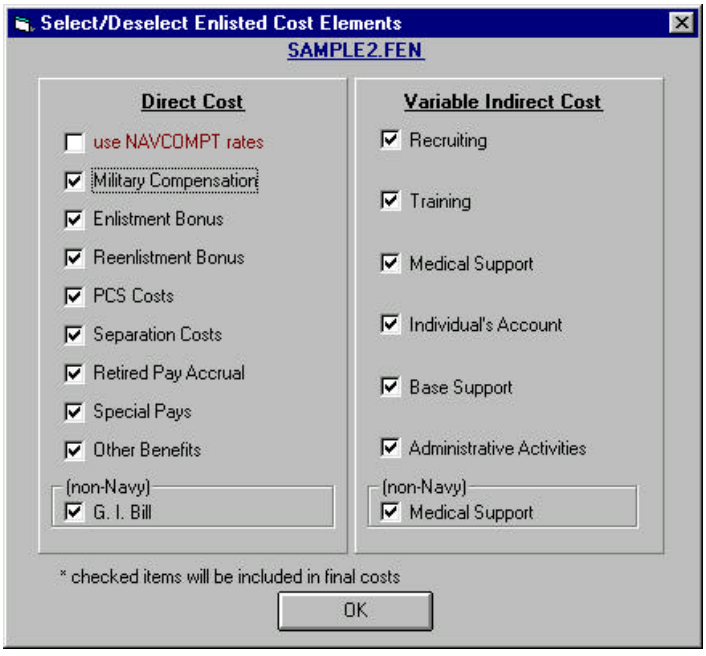
❑ Now, go back to the **Edit** menu and pull down the options.



Notice that **Edit Enlisted Costs** is now undimmed. The first (top-level) option for **Editing Enlisted Costs** is **Select/Deselect Cost Elements**. This screen allows you to turn specific cost elements on or off.

Select/Deselect Cost Elements

❑ Choose *Select/Deselect Cost Elements.*



Note that they are divided into **Direct** and **Variable Indirect** elements (left to right). Non-Navy costs appear at the bottom. The first direct option is to use **NAVCOMPT** standard rates in lieu of the default direct costs. Navy Composite Standard (NAVCOMPT) Rates are widely used throughout the Navy cost community and, as such, appear as a Direct Cost option in COMET. NAVCOMPT standard rates will only generate one direct cost for each pay grade (E1-O10) regardless of rating, EMC or designator. A higher degree of granularity is obtained in COMET if the applicable rating, EMC or designator is selected.

- ❑ Check the *use NAVCOMPT rates* box**.**

Note that all other direct elements are immediately dimmed. If you choose this option, no other direct costs may be included.

- ❑ Click the *use NAVCOMPT rates* box again.

The previous settings come back. Even if you modify the other direct elements, they will be restored to their original settings if you turn off the *NAVCOMPT* option.

- ❑ Turn off the *non-Navy G.I. Bill* option by clicking the box.
- ❑ Select the *use NAVCOMPT rates* box again.
- ❑ Turn *NAVCOMPT* off and the previous settings (except for **non-Navy**) are restored.
- ❑ We're going to look at the costs with **use NAVCOMPT rates** selected, so click *use NAVCOMPT rates* one final time.
- ❑ Click *OK* to exit and save.

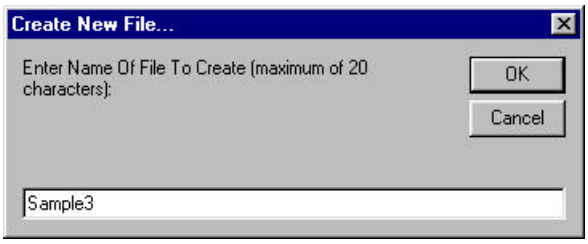
Specify Direct Costs

Now we're going to look at some other options under the **Edit** menu.

- ❑ Under **Edit**, select *Edit Enlisted Costs.*

The **Specify Direct Costs** option is dimmed. That's because we've chosen **use NAVCOMPT rates** for the direct side. There's nothing to edit. In order to look at all of the editing options, let's create a new enlisted cost file.

- ❑ Under **Edit**, choose *Select Enlisted Cost DB to Edit*.
- ❑ Click the *Create New Enlisted Cost File* button.
- ❑ Enter the file name *Sample3* in the *Create New File* dialog box and click *OK*. It is not necessary to add the *.fen* extension.

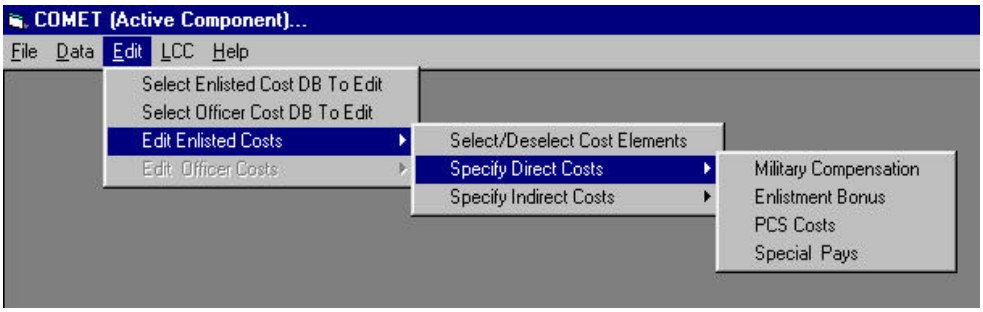


Two things happened when you clicked **OK**: COMET automatically added the **.fen** extension to the file and it is now stored with the files in the **Enlisted Cost Files** dialog box. The **SAMPLE3.FEN** file is an exact copy of the **default.fen** enlisted cost file; since it is a new file, however, you can now customize its direct and variable indirect cost elements.

❑ From the Enlisted Cost Files dialog box, select *Sample3.fen* and click *OK*.

Since all you have done is chosen a file to work with, the dialog box disappears and you are now back to the **COMET Active Component** main (blank) screen).

❑ From the **Edit** menu again, choose *Edit Enlisted Costs* and then *Specify Direct Costs.*

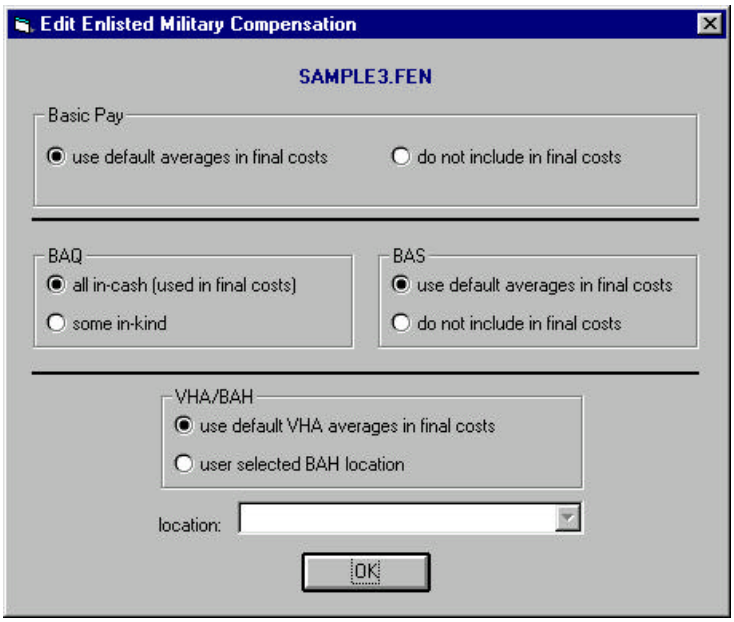


You have four options from which to choose:

1. **Military Compensation**
2. **Enlistment Bonus**
3. **PCS (Permanent Change of Station) Costs**
4. **Special Pays**

Military Compensation

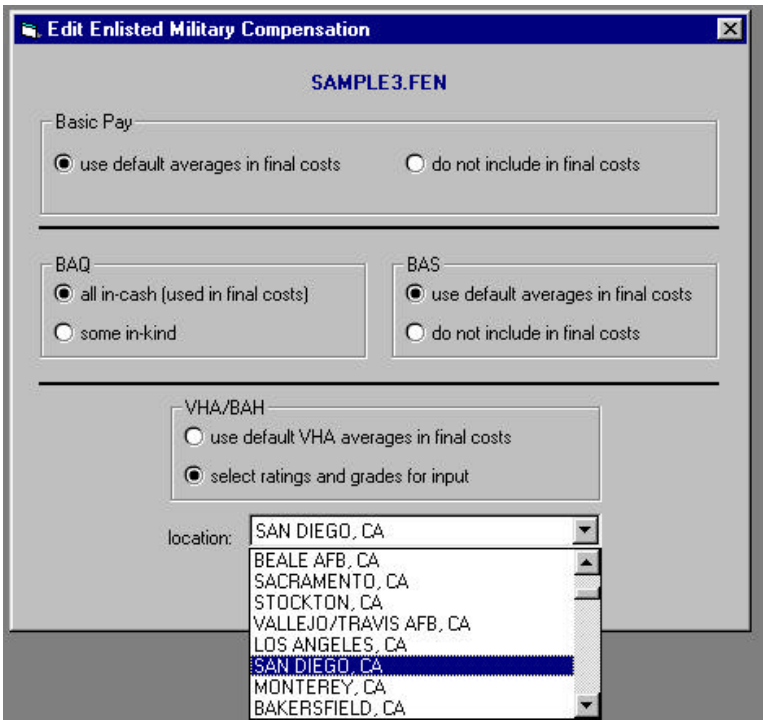
❑ Choose *Military Compensation*.



There are four categories of information stored here:

1. You can select or deselect **Basic Pay**.
2. For Basic Allowance for Quarters (**BAQ**), you can assume all in-cash or account for the fact that some enlisted personnel receive in-kind housing.
3. You can select or deselect Basic Allowance for Subsistence (**BAS**).
4. For Variable Housing Allowance (**VHA**) and Basic Allowance for Housing (**BAH**), you can use default VHA averages included in the model or you can select a specific location and the model will apply the actual BAH rates by paygrade and dependents status. You would use this option if you knew the specific location of the billets and wanted to reflect actual costs rather than a weighted average.

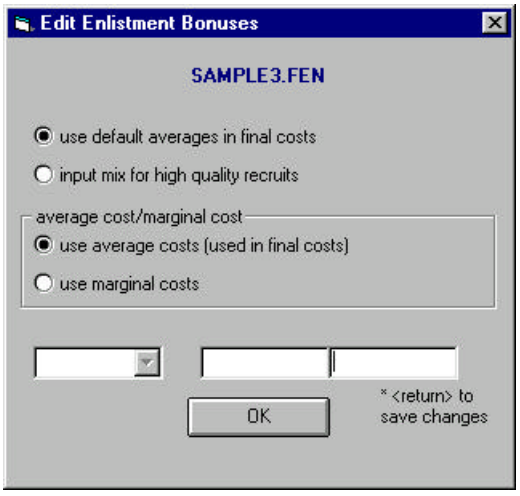
❑ Click the *user selected BAH location* button in the VHA/BAH group. Scroll down in the drop-down box to select *SAN DIEGO, CA* (locations are listed alphabetically by state).



❑ Click *OK* to exit the **Edit Enlisted Military Compensation** dialog box and return to the blank **COMET Active Component** screen.

Enlistment Bonus

❑ From the **Edit** menu again, choose *Edit Enlisted Costs* and then *Specify Direct Costs.* This time, choose *Enlistment Bonus*.



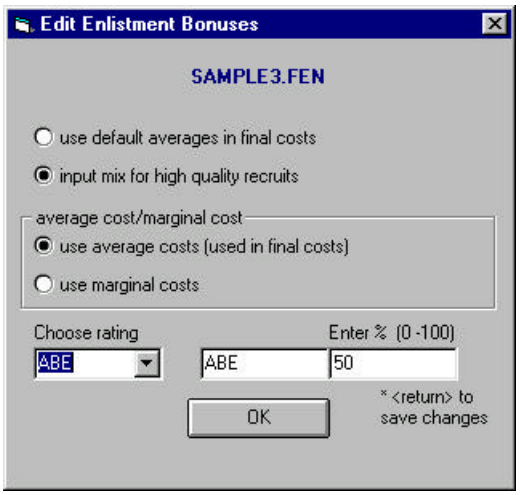
There are two options here. First, we can use the model's (default) average quality mixes. The average enlistment bonus depends on the proportion of total recruits to a rating that are "high quality" (the group that has historically been eligible for an enlistment bonus). Alternatively, we can override the default and specify a percentage high quality.

- ❑ Click *input mix for high quality recruits.*
- ❑ Choose *ABE* from the rating list.

Note that the default data report that about **24 %** of ABEs are high quality. Let's change that to 50%.

- ❑ Type in *50* in the **Enter %** field and hit *Enter*.

Notice the label below the block where you just entered the value *50*. You must hit the *Enter* (*Return*) key to save changes.



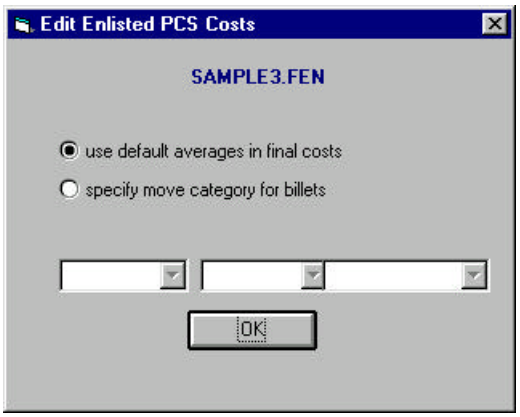
The other option here is to use either marginal or average enlistment bonus costs. The average is based on the most recent available data that reports what the average high-quality recruit in each rating received for an enlistment bonus. The marginal cost is based on econometric parameters that reveal a pay elasticity. It estimates the additional enlistment bonus cost necessary to attract an additional high-quality recruit in that rating. You would use this option if the scenario you were looking at implied that the net number of enlisted personnel in a particular rating will increase.

- ❑ Click *OK* and return to the blank **COMET Active Component** screen.

PCS Costs

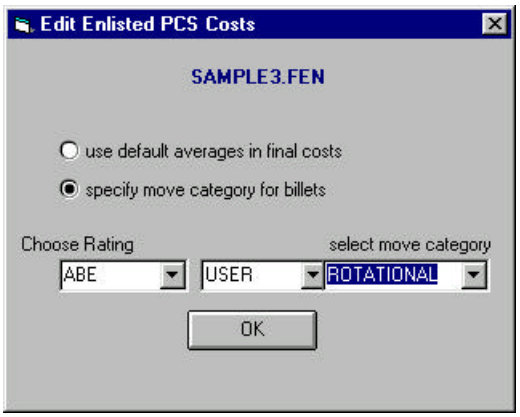
The next option in the direct cost menu is **PCS Costs**. These are just operational and rotational moves. PCS costs that are tied to training or accessions are also included, but they are tied to training and recruiting and cannot be changed here.

- ❑ From the **Edit** menu again, choose *Edit Enlisted Costs* and then *Specify Direct Costs.* Then choose *PCS Costs.*



There are two options here, also. The **use default averages in final costs** option is based on average PCS costs incurred by rating, paygrade, and dependent status. Alternatively, you can choose either all operational or all rotational (any PCS move involving an overseas location) moves. Again, you would do this by individual ratings.

- ❑ Click on *specify move category for billets.*
- ❑ In the first drop-down list, select the *ABE* rating.
- ❑ In the middle list, change **DEFAULT** to *USER*.
- ❑ In the last drop-down, you can choose between **OPERATIONAL** (CONUS) or **ROTATIONAL** (OCONUS) moves. Select *ROTATIONAL* moves.



- ❑ Click *OK* to save and exit.

You will once again return to the blank **COMET Active Component** screen.

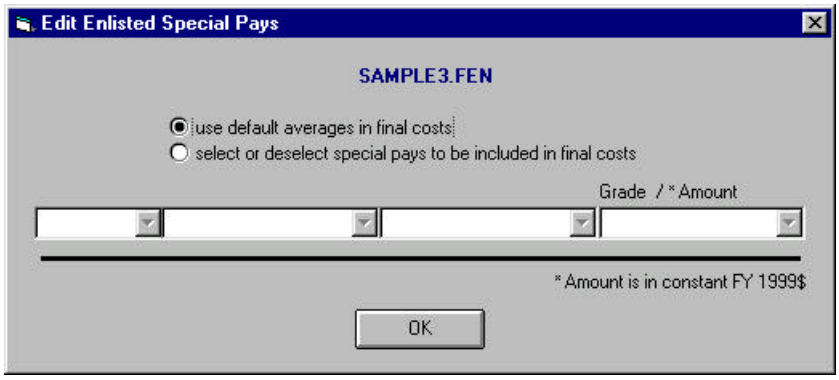
Special Pays

The final **Direct Cost** option is **Special Pays**.

- ❑ From the **Edit** menu again, choose *Edit Enlisted Costs* and then *Specify Direct Costs.* Then choose *Special Pays.*

You will be able to edit only the following Special Pays:

- ***Flight Pay*** (enlisted aircrew/ACIP for officers)
- ***Hazardous Duty Incentive Pay*** (HDIP, enlisted/officer)
- ***Diving*** (enlisted/officer)
- ***Hostile Fire or Imminent Danger Pay*** (HFP or IDP, enlisted/officer)
- ***Sub*** (enlisted/officer)
- ***Foreign Language Proficiency Pay*** (FLPP, enlisted/officer)
- ***Special Duty Assignment Pay*** (SDAP, enlisted only)
- ***Certain Places or Foreign Duty Pay*** (CPP or FDP, enlisted only)
- ***Career Sea Pay*** (CSP, enlisted/officer)
- ***Family Separation Allowance*** (FSA, enlisted/officer)
- ***Overseas Housing Allowance*** (enlisted/officer)
- ***Nuclear Officer Incentive Pay*** (NOIP, officer)

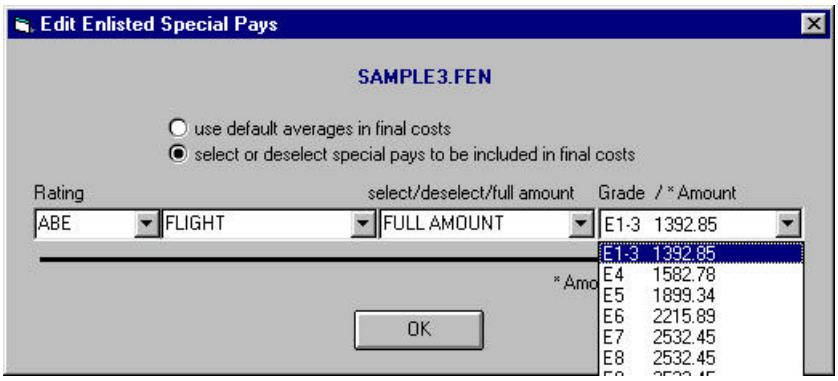


Once again, there are two options here. The **use default averages in final costs** option uses a weighted average of the special pays. Instead, let's specify some particular special pays for the **ABEs**.

- ❑ Click *select or deselect special pays to be included in final costs.*
- ❑ In the first drop-down list, select the *ABE* rating.
- ❑ In the middle list, select *FLIGHT* pay.

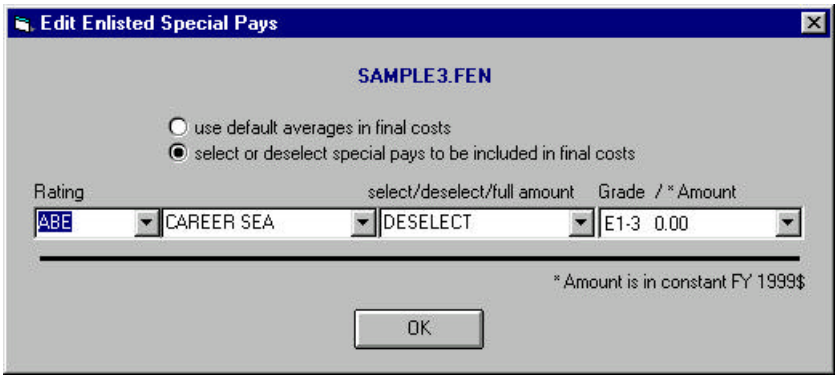
Although we have already turned off the global default switch (by choosing *select or deselect special pays to be included in final costs*), each individual special pay for ratings is set to default averages. Let's assume that all of the ABE billets in our study will be eligible for flight pay.

- ❑ In the last drop-down, you can choose between **DEFAULT, DESELECT**, or **FULL AMOUNT**. Select *FULL AMOUNT.*



Now, all ABE billets will receive the full amount of flight pay. Notice that we could also turn an individual pay completely off (e.g., sea pay if all of our billets are at a shore detachment).

- ❑ Choose CAREER SEA and DESELECT.



- ❑ Click *OK* to save and exit.

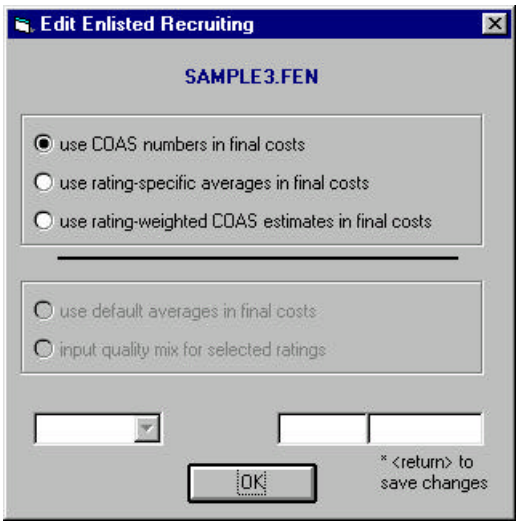
You will once again return to the blank **COMET Active Component** screen.

Specify Indirect Costs

Now we'll look at the two indirect cost editing options.

Recruiting

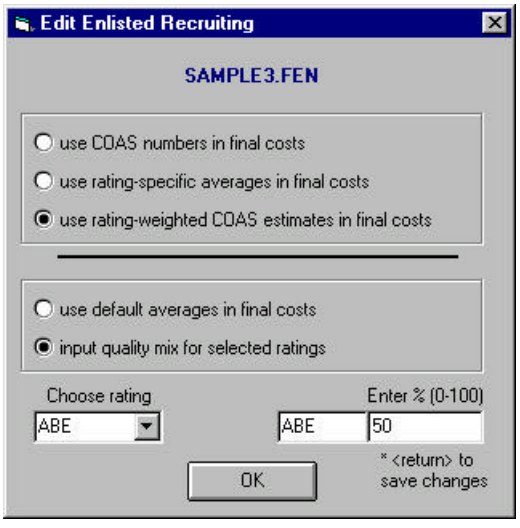
- ❑ From the **Edit** menu again, choose *Edit Enlisted Costs* and then *Specify Indirect Costs*. Then choose *Recruiting*.



There are several different ways that recruiting costs can be included in the aggregate indirect costs. The default option is the all-Navy COAS estimate (**use COAS numbers in final costs**). However, the user may also select **use rating-specific averages in final costs** or **use rating-weighted COAS estimates in final costs**. The average cost number, however, includes both fixed and variable cost elements. With either of the latter two options, we can also change the high-quality mix. Average recruiting costs will vary between low-quality and high-quality recruits, so the mix affects final costs.

- ❑ Select *use rating-weighted COAS estimates in final averages* for this exercise.
- ❑ Choose the *ABE* rating in the bottom left box.

Remember that we changed the high-quality mix to 50% under the **Enlisted Bonus** menu? That change is reflected here; any changes made here will also show up in the **Enlisted Bonus** window.

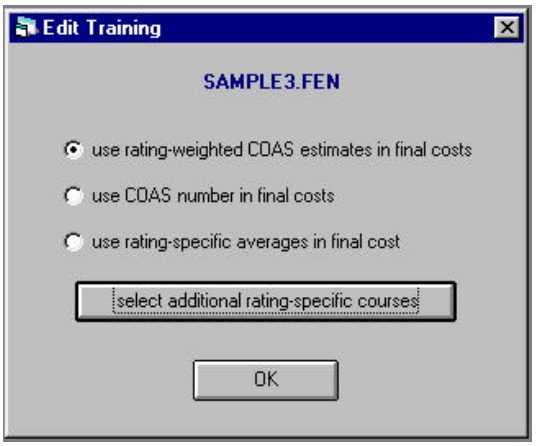


- ❑ Click *OK* to save and exit.

Training

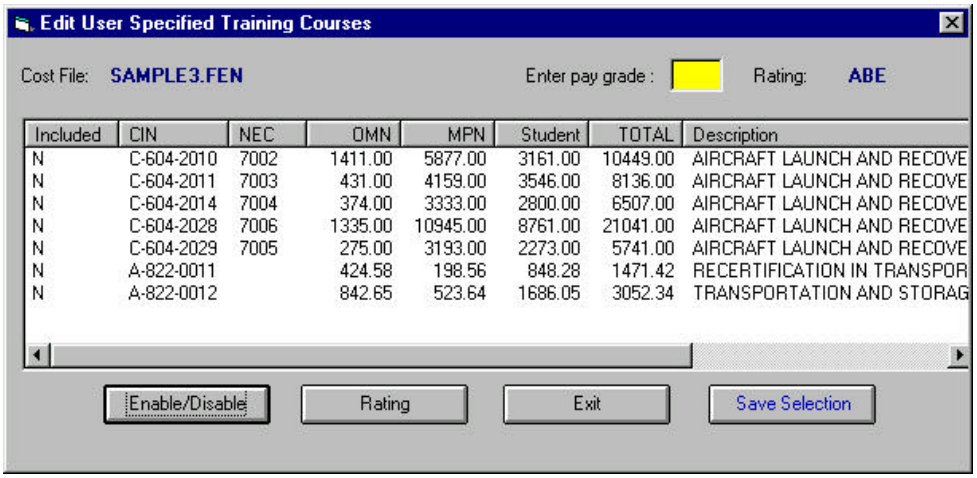
The second indirect cost option is **Training**.

- ❑ From the **Edit** menu again, choose *Edit Enlisted Costs* and then *Specify Indirect Costs*. Then choose *Training*.



Here, we can also use three accounting methods: **use rating-weighted COAS estimates in final costs**, **use COAS number in final costs**, or **use rating-specific averages in final cost**. Unlike the **Recruiting** dialog box, the default here is COAS rating-specific. If we choose the average-cost approach, the default costs include only those costs necessary to fully qualify a Sailor in that rating. They do not include any advanced (C-school) training. Let's add some specific training for ABEs.

- ❑ Click *use rating-specific averages in final cost*.
- ❑ Click the *select additional rating-specific courses* button.
- ❑ Now click the *Rating* button and choose *ABE*.



The list of courses that appears in the box only includes courses that ABEs are eligible for. For a specific exercise, you may want to include Navy Enlisted Classification (NEC)-specific training. Let's add the first course listed, **C-604-2010**, which awards a 7002 NEC.

- ❑ Select the first course listed by clicking on the *N* under the **Included** heading.
- ❑ Click the *Enable/Disable* button and the **Included** flag in that row will toggle to **Y**.

We also have to enter a paygrade at which that training is received. That will affect the billets over which the training cost will be amortized.

- ❑ Type in *5* in the yellow box at the top of the window.

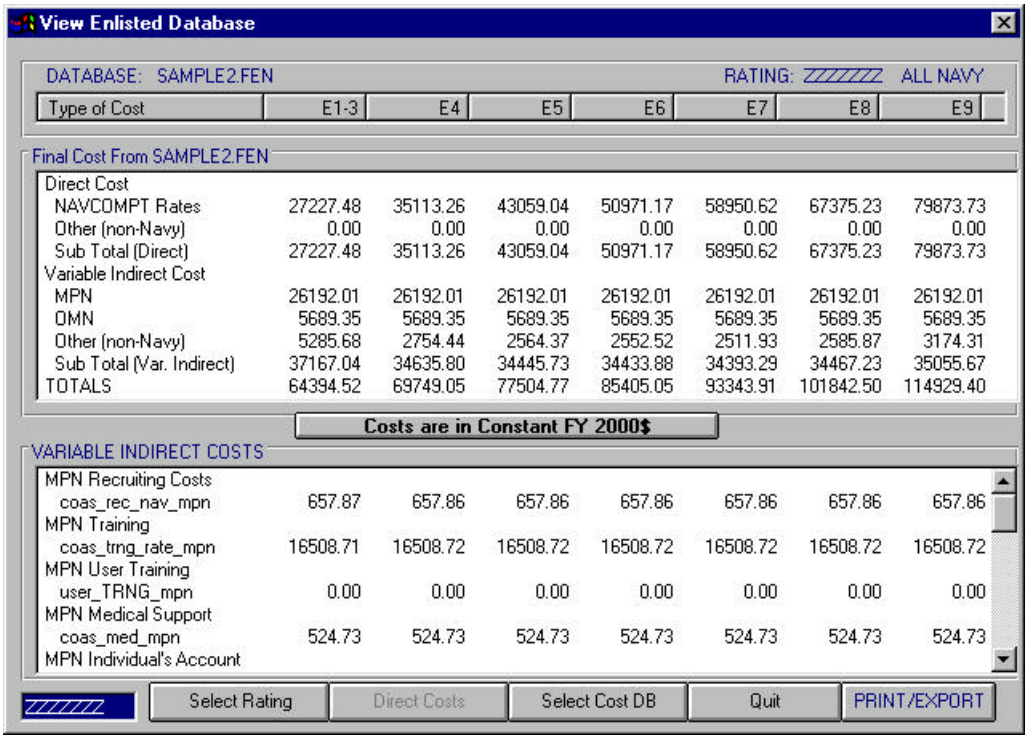
The cost will be spread over billets in paygrades E5 and above.

- ❑ Now click *Save Selection*, followed by *Exit*.
- ❑ Click *OK* to quit.

You will once again return to the blank **COMET Active Component** screen.

Before we look at the officer cost editing options, let's go back and look at what all of these changes did to our cost files.

- ❑ From the **File** menu, select *View Enlisted Costs*, pick *Sample2.FEN*, and click *OK*.



This is the cost file that we set to use NAVCOMPT composite rates. Because we made changes, COMET's going to take a minute to recalculate all of the aggregated cost variables (a dialog box will appear indicating the recalculation is in progress). When the file finishes updating, you are looking at the all-Navy costs. Notice in the top window

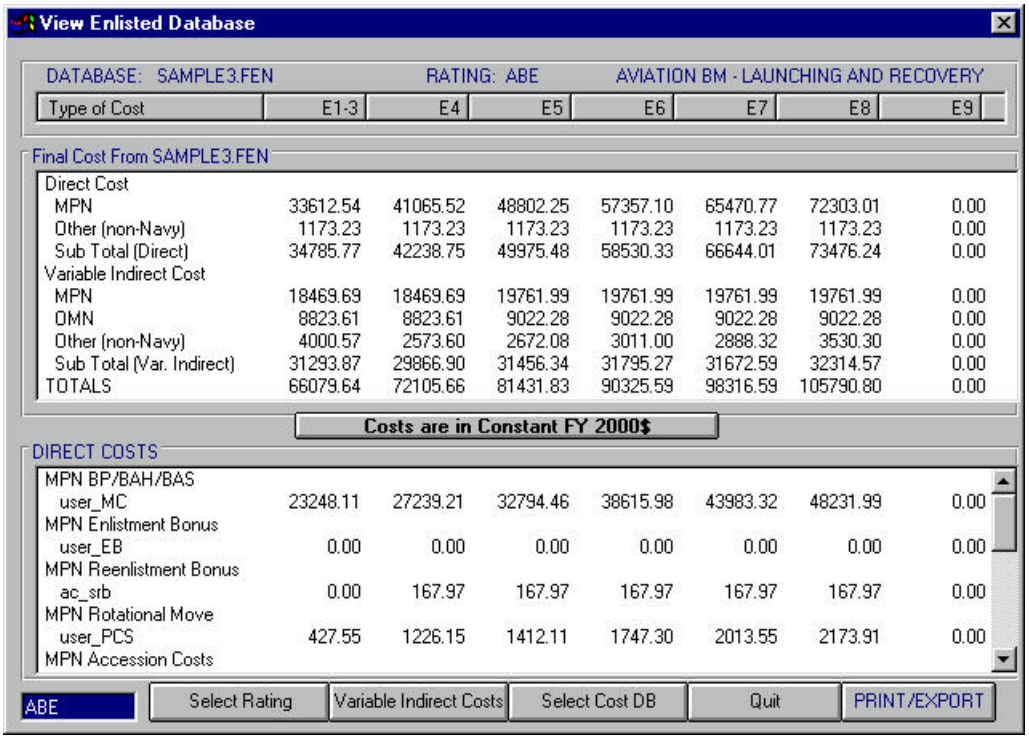
(**Final Cost from SAMPLE2.FEN**) under **Direct Cost** that, instead of **MPN**, the heading now says **NAVCOMPT Rates**.

Let's look at the other cost file we made: **SAMPLE3.FEN**. You may recall that we made a number of changes to the **ABE** rating.

- ❑ Click the *Select Cost DB* button at the bottom of the window, choose *SAMPLE3,* and click *OK*.

Again, COMET's going to take a minute to recalculate all of the aggregated cost variables.

- ❑ Click the *Select Rating* button at the bottom of the window.
- ❑ Next, choose the *ABE* rating, to which we've made most of our changes, from the drop-down list.



If you printed the resulting screen and compare it to the default settings, you would see some different numbers throughout the screen. Although most of the detailed costs are unaffected, there is an exception since we decided to give all ABEs full flight pay rather than the default mix. If you chose to produce a printout for ABEs, you would note at the top right of the printout that flight pay reflects your *Full Amount* selection and your *Deselect* selection for Sea Pay (all other special pays remaining at the *Default* setting).

- ❑ In the **DIRECT COSTS** window in the bottom half of the screen, scroll down to **Special Pays**.

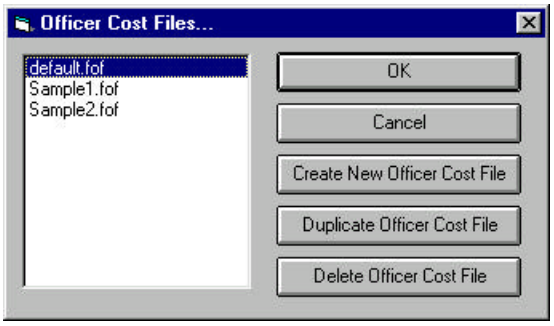
Under the default settings, Special Pays are represented by the variable **ac_sp**, which is the average mix of special pays received in a particular paygrade and billet. The values range from about $650/year to $2960. Because we selected customized values for Flight Pay and Career Sea Pay, you see that Special Pays are represented instead by **user_SP.** The values here are uniformly higher, reflecting larger flight pay and deselected Sea Pay.

❑ Click *Quit* to exit and return to the blank **COMET Active Component** window.

Select Officer Cost DB to Edit

Now we'll move back to the officer cost file editing menu. We won't spend much time here because many options are identical to their enlisted counterparts.

❑ From the **Edit** Menu, choose *Select Officer Cost DB* to Edit.



❑ Select *Sample2.fof* and click *OK*.

You will return to the blank **COMET Active Component** screen.

Edit Officer Costs

Select/Deselect Cost Elements

❑ Under the Edit menu, choose *Edit Officer Costs*, then choose *Select/Deselect Cost Elements.*

This box will look very familiar to you. It's almost identical to the enlisted window, with a couple of exceptions. First, notice that there are no non-Navy costs on the **Direct Costs** side (Navy does not budget for Montgomery GI Bill for officers). Also, officer **Incentive Pays** are turned off by default. Let's turn them on so that we can edit them.

❑ Click the *Incentive Pays* check box.

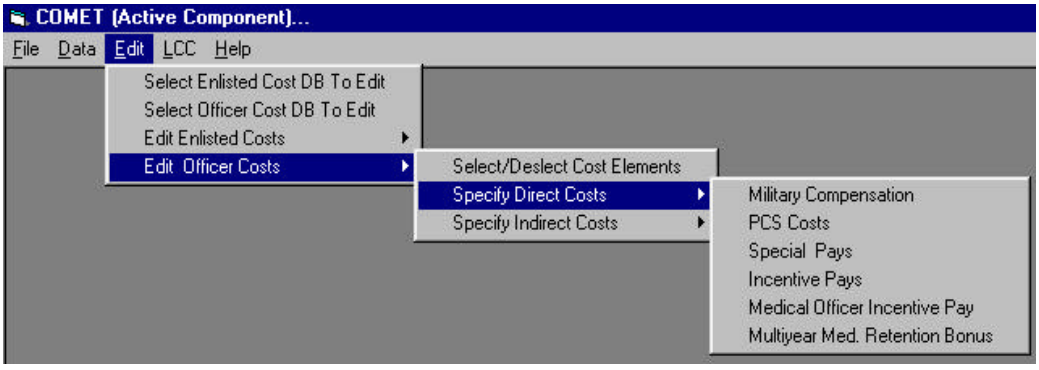
On the **Variable Indirect Costs** side, we have two different training switches. The first pertains to general officer training, while the second is for community-specific training.

❑ Click *OK* to save the changes and exit to the blank **COMET Active Component** screen.

Now we'll look at some other options.

Specify Direct Costs

❑ Under the **Edit** menu, choose *Edit Officer Costs*, then *Specify Direct Costs*.



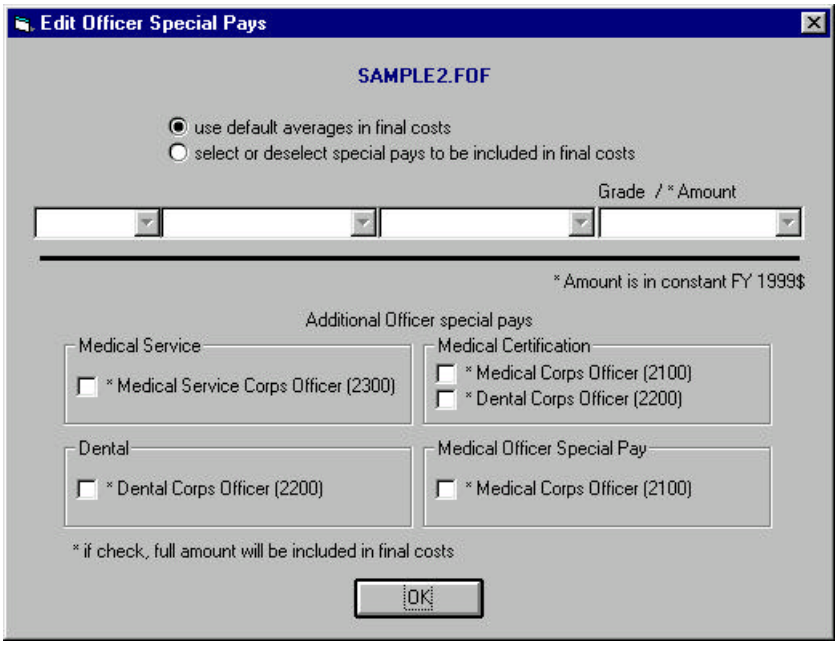
There are six options on this menu:

1. **Military Compensation**
2. **PCS Costs**
3. **Special Pays**
4. **Incentive Pays**
5. **Medical Officer Incentive Pay**
6. **Multiyear Med. Retention Bonus**

The first two are identical to the enlisted counterparts, so we can skip them in this tutorial.

Special Pays

❑ Select *Special Pays*.



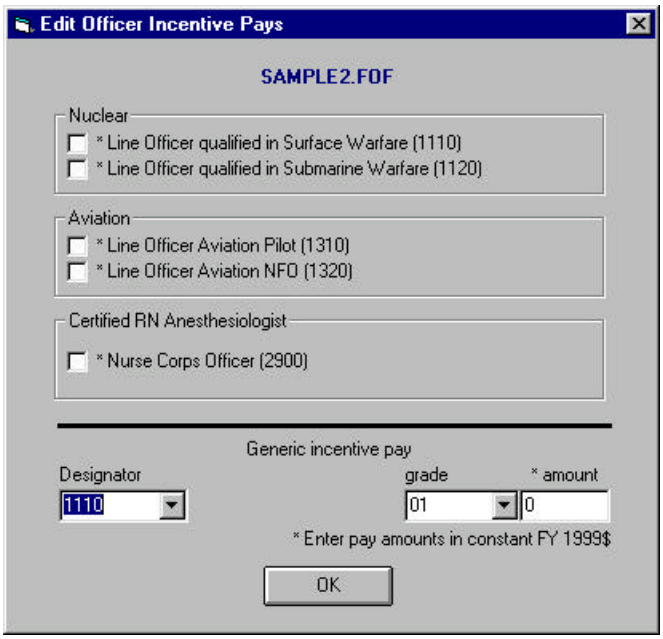
The top half of the window looks like the enlisted option. You can either **use default averages in final costs** or specify a mix by designator by choosing **select or deselect special pays to be included in final costs**. When using the second option, you can deselect or use the full amount of the pay for each designator. In the bottom half of the window are check boxes for five medical/dental **Additional Officer special pays**. These pertain to specific designators and are simply toggled on or off by clicking the boxes.

❑ Click *OK* to exit.

Next we'll edit officer incentive pays.

Incentive Pays

- ❑ Under the **Edit** menu, choose *Edit Officer Costs*, then *Specify Direct Costs*, and then select *Incentive Pays*.



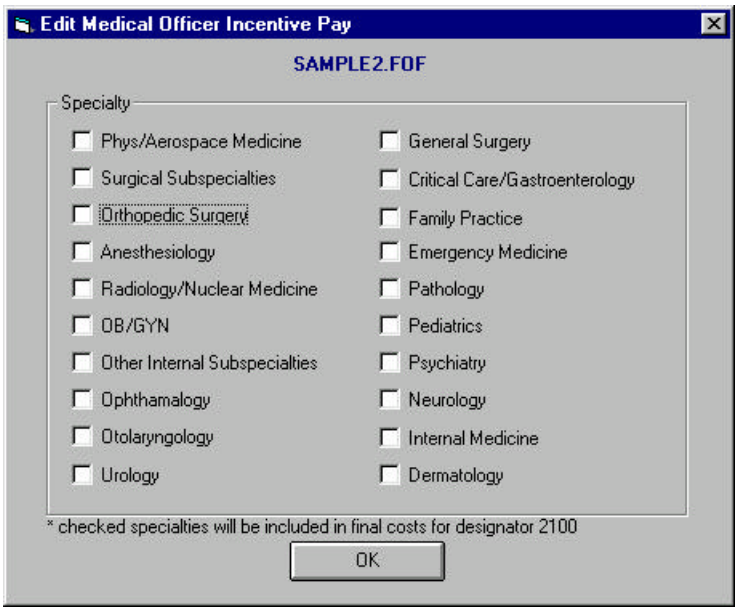
The upper part of this window has five incentive pays: two for **Nuclear**, two for **Aviation**, and one for **Certified RN Anesthesiologist**. At the bottom, under **Generic incentive pay**, you can also "make up" your own incentive pay by designator and grade.

- ❑ Click *OK* to exit to the blank **COMET Active Component** screen.

The last two options are pays specific to Medical Officers.

Medical Officer Incentive Pay

- ❑ Under the **Edit** menu, choose *Edit Officer Costs*, then *Specify Direct Costs*, and then select *Medical Officer Incentive Pay.*



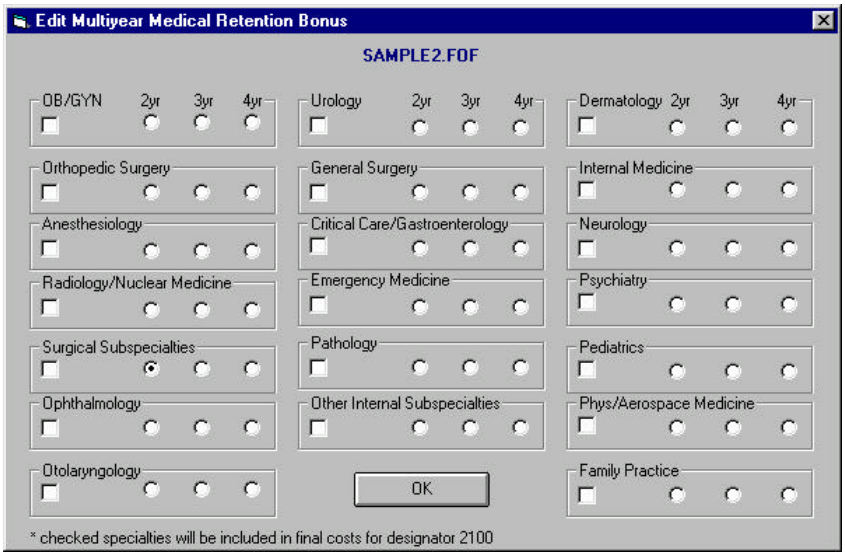
Note that you can select any incentive pay by specialty. You can also make multiple selections, and they will all be activated for every medical officer in designator 2100.

❑ Click *OK* to exit to the blank **COMET Active Component** screen.

Multiyear Medical Retention Bonus

The final option from this menu is used to set up medical retention bonuses.

❑ Under the **Edit** menu, choose *Edit Officer Costs*, then *Specify Direct Costs*, and then select *Multiyear Med. Retention Bonus*.



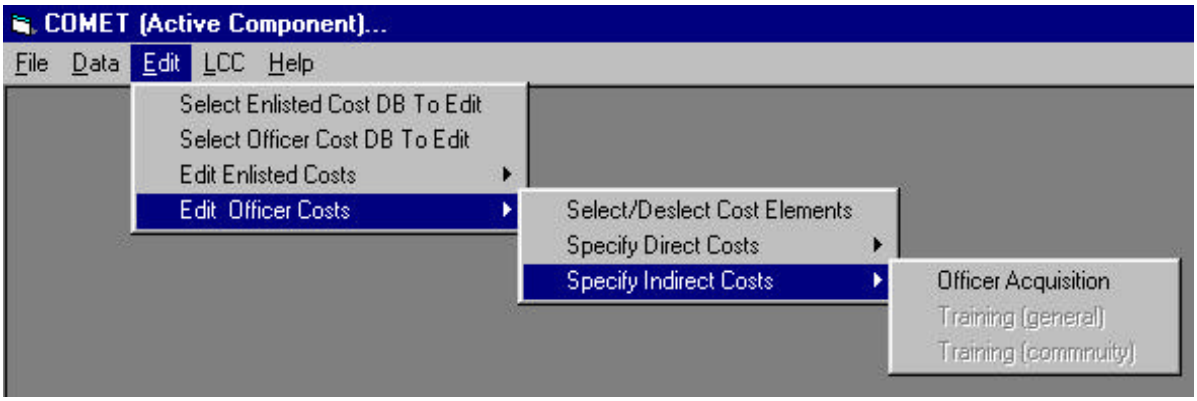
Medical Officers may also receive multi-year retention bonuses in areas of specialization. These bonuses are associated with a two-, three- or four-year service commitment and are in addition to any other Medical Officer Incentive Pays.

❑ Click *OK* to exit to the blank **COMET Active Component** screen.

Specify Indirect Costs

There are also similar options in COMET for indirect officer costs.

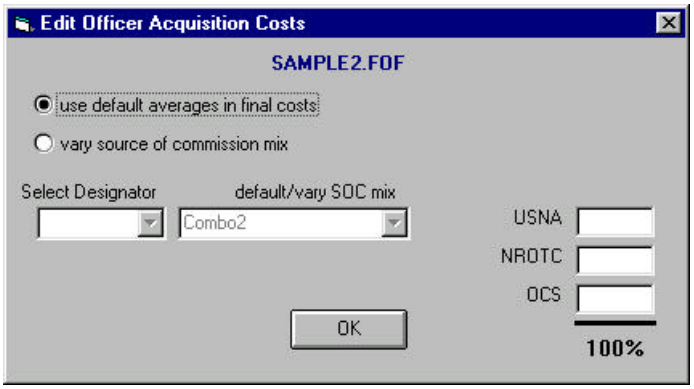
❑ Under the **Edit** menu, choose *Edit Officer Costs*, then *Specify Indirect Costs*.



There are three options under this menu, but only **Officer Acquisition** costs is undimmed. Under the present configuration of the model, there are no editing options for general or community-specific officer training, other than the select/deselect options. However, the model is set up to accommodate future improvements in officer training data, which will necessitate use of those editing options.

Officer Acquisition

❑ Select *Officer Acquisition*.



The level of **Officer Acquisition** costs is affected by the proportion of newly commissioned officers acquired from each of three Sources of Commission (SOC):

Naval Academy, NROTC, and OCS. The default settings use the observed proportions in the underlying cost data, but you may edit these proportions manually to achieve a different mix. In general, increasing the proportion of Academy acquisitions will increase costs and increasing the proportion of OCS commissions will reduce costs.

❑ Click *OK* to exit to the blank **COMET Active Component** screen.

The Life-Cycle Cost (LCC) Menu

The LCC menu assists in building units that describe the manpower associated with a ship, squadron, etc. You can aggregate these units into a platform that represents the total manpower requirements for a life-cycle analysis. Using the LCC function, you can then create and run a project that associates a platform with cost files and user settings. The final function under the LCC menu allows you to compare the results of two separate projects.

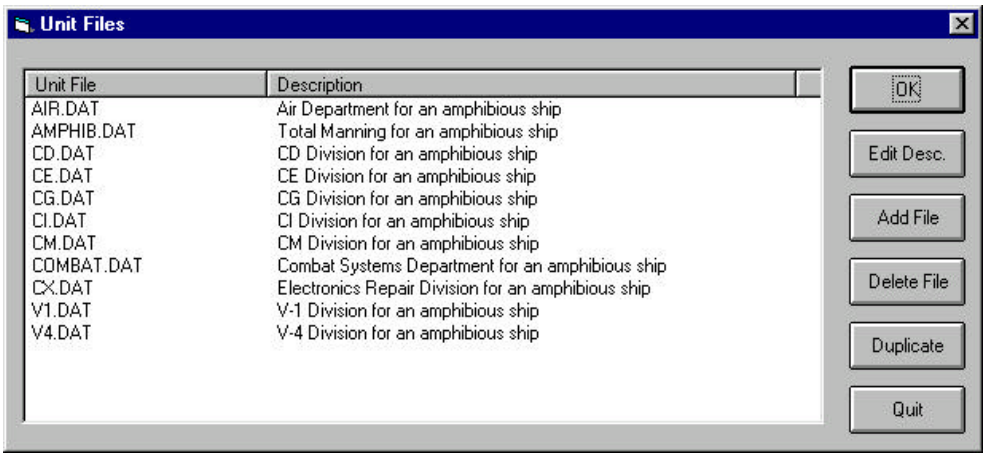
Build Units

The first step in a life-cycle cost analysis is to aggregate the manpower into a set of billets, defined by paygrade and skill. A unit may be:

- a squadron
- a ship
- a department on a ship
- a division within a department
- the manpower devoted to maintenance and operation of a piece of equipment
- the best level of aggregation depends on the analysis that you are conducting.

We'll start by editing one of the units that we already have in the model.

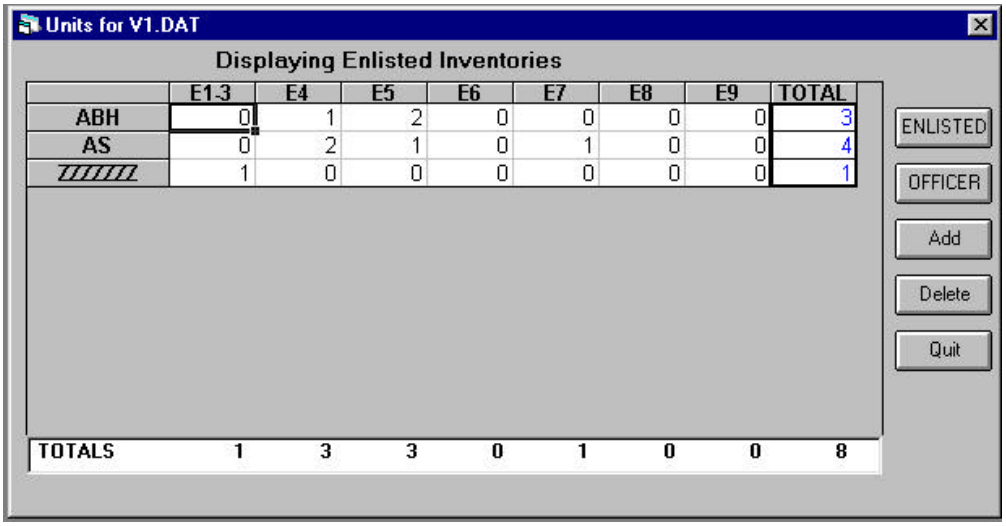
❑ From the **LCC** menu, choose *Build Units.*



When you first install COMET Version 1.1, the file list will contain only the sample list that accompanies the tutorial. The examples included are for the same ship platform—a

generic amphibious ship. They show three different levels of aggregation. We'll start at the lowest level of aggregation—the division.

- ❑ Scroll down to the bottom of the list and select the **Unit** named *V1.DAT* by clicking on it with your mouse.
- ❑ Click *OK*.



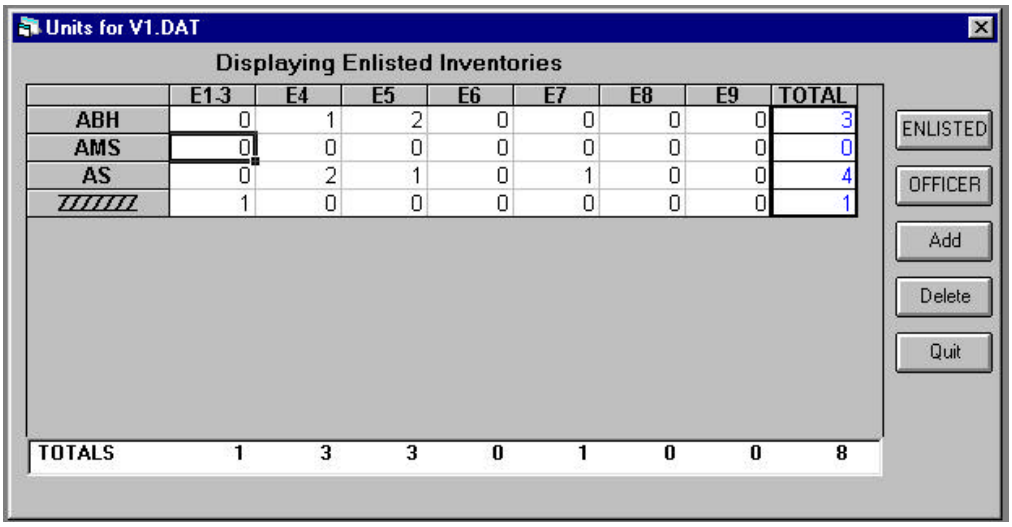
This box displays the manpower existing in your files broken down by paygrades (shown under **Displaying Enlisted Inventories**). This sample file shows enlisted manpower in this division in three different skills:

1. **ABH** (Aviation Boatswain's Mates)
2. **AS** (Aviation Support Equipment Technician)
3. **ZZZZZZZ** (all-Navy Basic Airmen)[1]

Row (rating) and column (paygrade) totals are also displayed. Let's add another rating to this division.

- ❑ Click the *Add* button and the rating list will pop up.
- ❑ Choose *AMS Aviation Structural Mechanic – Structures* and click *OK*.

[1] While airmen/seamen may possess an applicable rating (ABHAN or YNSN), the manpower requirements used for this example do not stipulate a particular rating for the billet. Therefore, the all-Navy (ZZZZZZZ) rating is used.

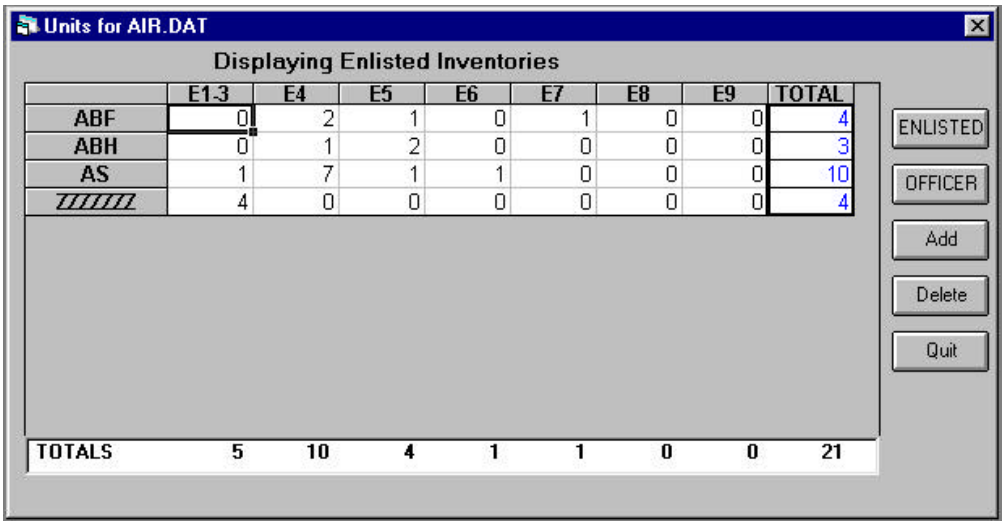


AMS has been added to the list, with no manpower.

- ❑ Type *1* under both E5 and E8 in the **AMS** row and click *Quit* to save your changes and bring back the **Unit Files** box.

In many cases you will not need to work at such a low level. Let's move up one level and look at the Air Department.

- ❑ In the **Unit Files** box, select *AIR.DAT* and click *OK*.



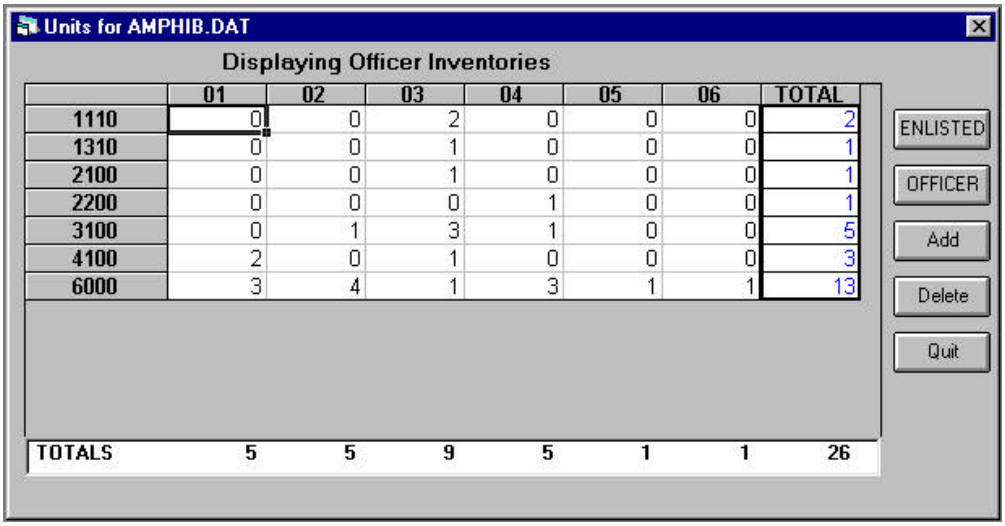
The manning in this window is the sum of two Air Department Divisions. Notice that it does not have the **AMS** manning that we just added to the V1 Division for demonstration purposes only.

- ❑ Click *Quit* to exit and return to the **Unit Files** box.

Next, we'll look at the highest level of aggregation.

❑ Scroll down the **Unit File** list, select *AMPHIB.DAT*, and click *OK*.

This screen displays the sum of all of the department units on the ship. The scroll bar on the right side of the unit window allows you to see all of the ratings. This unit also has officers included. To **Display Officer Inventories**, click the *Officer* button.



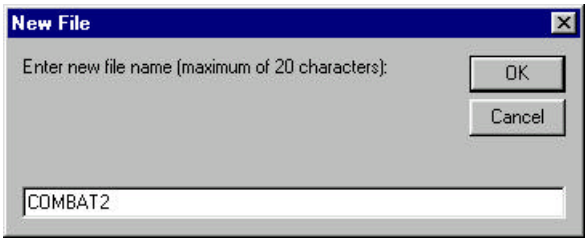
❑ Click *Quit* to return to the **Unit File** box.

For many costing drills, you'll often start with a baseline and then make changes to the manning. Rather than creating a brand new unit from scratch, you can sometimes just duplicate the baseline unit and modify the new unit. Especially when you have a big unit like **AMPHIB.DAT**, you'll save a lot of time. Let's try this out using the COMBAT Department.

❑ Select *COMBAT.DAT* from the **Unit Files** list and click *Duplicate.*

❑ Now enter the file name *COMBAT2*. DO NOT type a file extension. COMET automatically adds a ".DAT" extension to the file name.

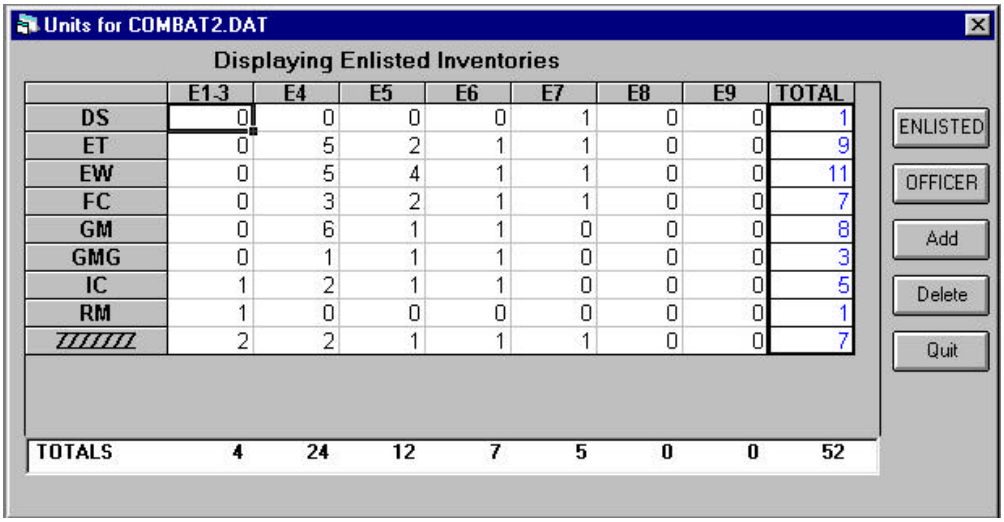
❑ Click *OK*.



❑ When prompted, click *YES* to verify the action.

The next pop-up box requires a description so we can recognize the file in the future.

- ❑ Type in *This is the new Combat Systems Department* and click *OK*. You will return to the **Unit Files** box.
- ❑ Scroll down and select the newly created unit, *COMBAT2.DAT*. Click *OK*.



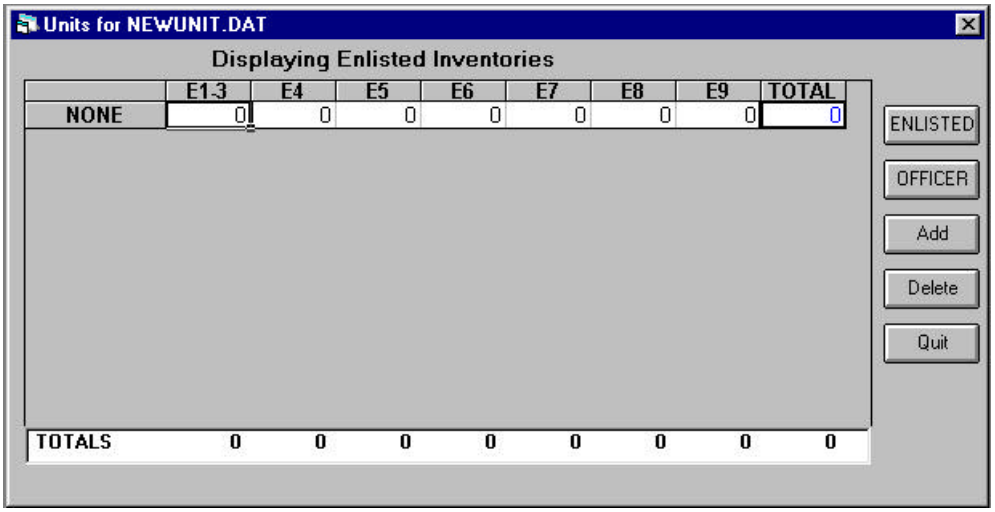
	E1-3	E4	E5	E6	E7	E8	E9	TOTAL
DS	0	0	0	0	1	0	0	1
ET	0	5	2	1	1	0	0	9
EW	0	5	4	1	1	0	0	11
FC	0	3	2	1	1	0	0	7
GM	0	6	1	1	0	0	0	8
GMG	0	1	1	1	0	0	0	3
IC	1	2	1	1	0	0	0	5
RM	1	0	0	0	0	0	0	1
////////	2	2	1	1	1	0	0	7
TOTALS	4	24	12	7	5	0	0	52

Let's double the manpower (inventory) for the ET rating.

- ❑ Using the Tab key to move between cells, in the **ET** row, type *10* under **E4**, *4* under **E5**, *2* under **E6**, and *2* under **E7**.
- ❑ Click *Quit* to save and exit to the **Unit Files** box.

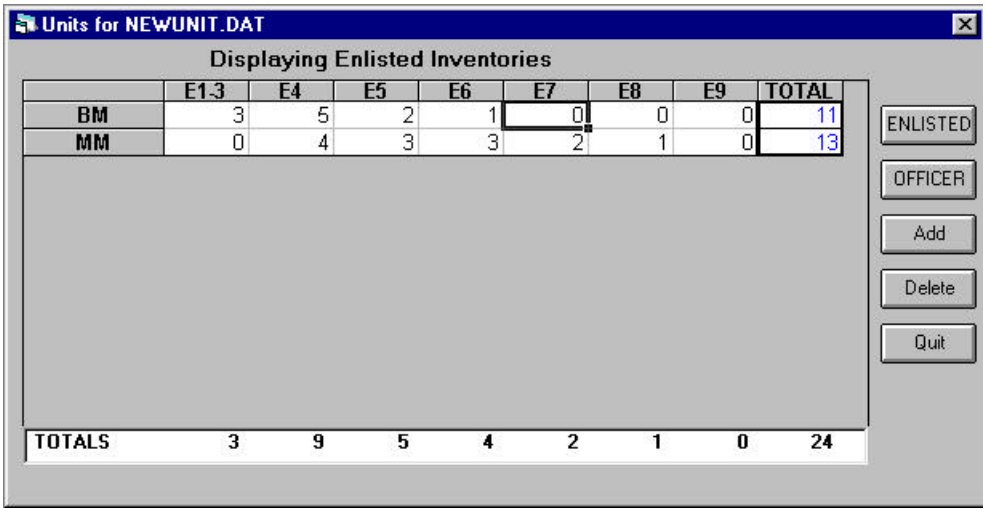
There is one last operation in the unit files area – creating new units from scratch.

- ❑ Click *Add File* from the **Unit Files** list and enter the file name *NEWUNIT.*
- ❑ Click *OK*.
- ❑ Enter the description *This is a new unit*.
- ❑ Click *OK*.
- ❑ Select the new unit by scrolling down the **Unit File** list, clicking on the NEWUNIT file and clicking *OK*.



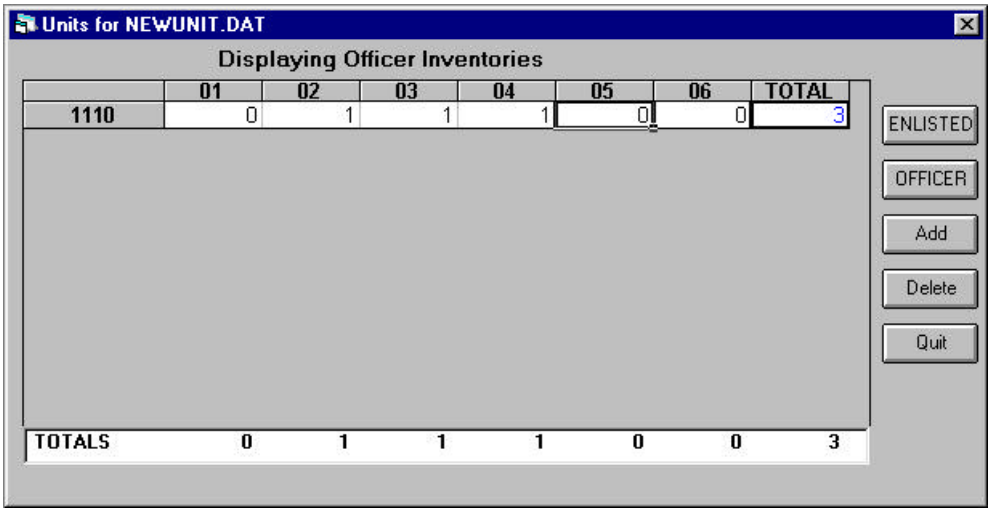
The unit is now empty, so we'll have to add some manpower. Let's start with some enlisted manning.

- ❑ Click *Add*.
- ❑ Scroll down the rating list, select *MM (MACHINIST'S MATE)*. Click *OK*. You'll be back at the unit table, with a row added for MMs.
- ❑ Click on the cell in the *MM* row under pay grade *E4*. Type *4* and cursor right to the next grade (*E5*).
- ❑ Type *3* and cursor right. Continue, entering 3 E6s, 2 E7s and 1 E8. The unit will now have 13 MMs. Row and column totals are immediately updated.
- ❑ Add the *BM (BOATSWAIN'S MATE)* Rating. Add 3 E1-3, 5 E4, 2 E5 and 1 E6.



- ❑ Click *OFFICER*. The display shows that there are no officer billets in this unit yet.

- ❑ Click *Add*.
- ❑ Select Designator *1110 (URL – Surface Warfare)*. Click *OK*
- ❑ Add 1 O3, 1 O4 and 1 O5.[2]

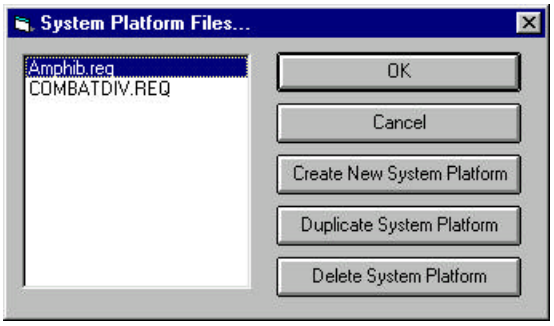


- ❑ Click *Quit* to save and exit.

Build System Platform

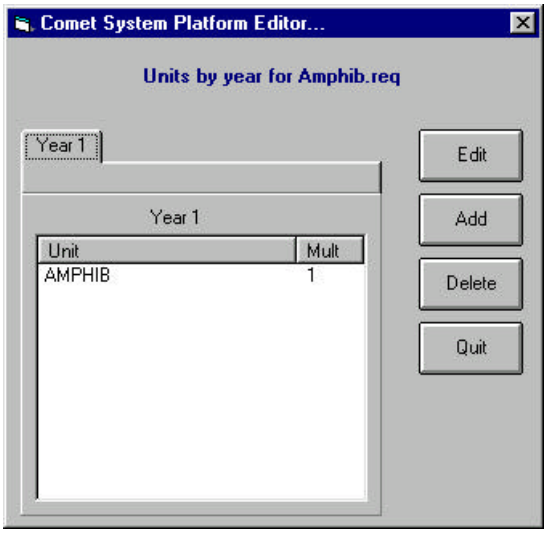
Platforms consist of requirements (.req) files. A **System Platform** describes the manning associated with a cost-analysis project. It may represent a ship, a squadron, a class of ships or some other project that requires an aggregation of manpower. The platform describes manpower using multiples of units across a variable number of project years. Under the **LCC** menu, select *Build System Platform*.

- ❑ Select *Amphib.req*.



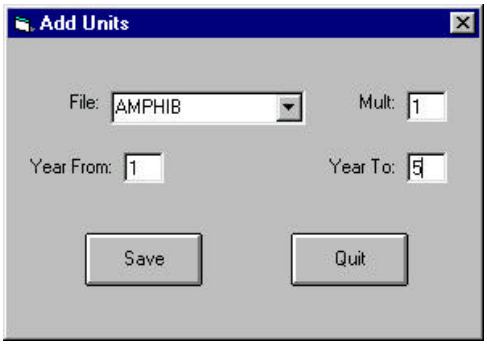
[2] COMET does not currently have direct or variable indirect costs available for Warrant Officer (W2 through W4) manpower requirements.

❑ Click *OK*.



This platform has one **AMPHIB** unit for 1 project year. We can expand the life cycle and add unit multiples to simulate ramping up or down over the project.

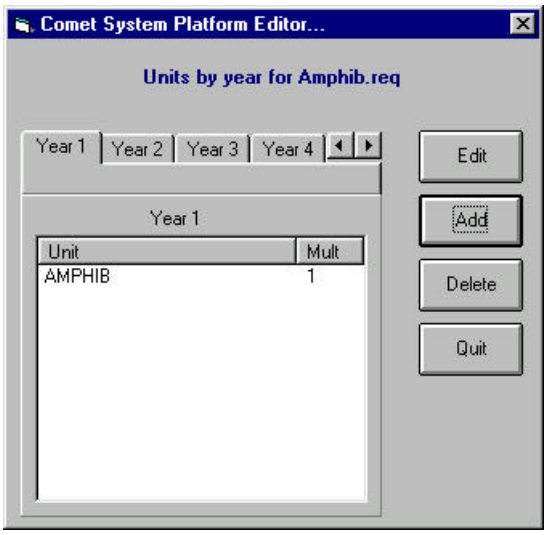
❑ Click the *Add* button.



❑ Now select the *AMPHIB* unit from the **File** drop-down box.

❑ Type *1* in the multiplier box (**Mult.**), and type *1* in the **Year From** box and *5* in the **Year To** box.

❑ Click the *Save* button to return to the **COMET System Platform Editor**.



Notice that we now have five tabs across the top of the box for **Year 1**, **Year 2**, etc. Use the arrow buttons to move between tabs. The number of years is user-defined.

- ❑ Select *AMPHIB* and click *Add* again to return to the **Add Units** box.
- ❑ Type in *2* units for years *6* through *10*.
- ❑ Click the *Save* button to return to the **COMET System Platform Editor**.
- ❑ Repeat this sequence as follows: *3* units from years *11* through *30*, *2* units for years *31* through *35*, and *1* unit for years *36* through *40*.
- ❑ Click the *Save* button to return to the **COMET System Platform Editor**.

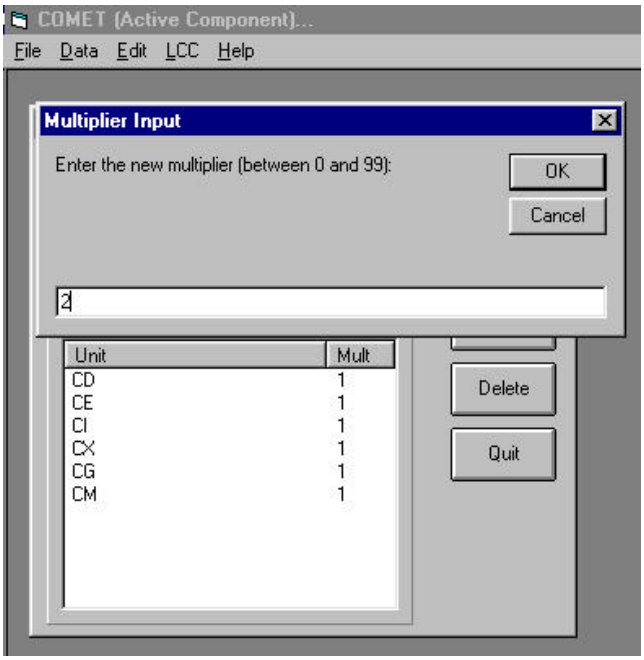
  There are now tabs for **Year 1** through **Year 40**.
- ❑ Click *Quit* to return to the blank **COMET Active Component** screen.

Next we'll try copying and modifying a requirements file. It works the same way as we did it under unit files.

- ❑ Under the **LCC** menu, select *Build System Platform*.
- ❑ Select *COMBATDIV.REQ* and click *Duplicate System Platform*.
- ❑ Enter the file name *COMBATDIV2.REQ*. DO NOT type a file extension. COMET automatically adds a **.req** extension to the file name.

You will return to the **System Platform Files** box.

- ❑ Select the new file *COMBATDIV2.REQ* and click *OK*.
- ❑ Now select the *CX* unit and we'll change the multiplier.
- ❑ Click the *Edit* button and enter a new multiplier of *2*.



- ❑ Click *OK*.
- ❑ Click *Quit* to save and exit.

You will return to the blank **COMET Active Component** screen.

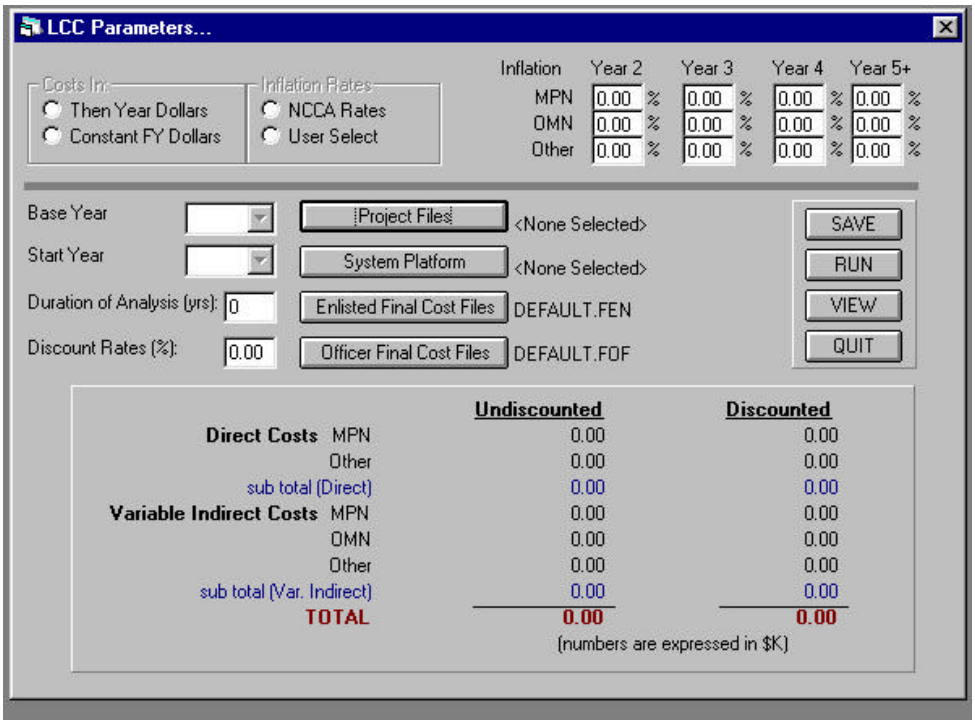
We're finally ready to estimate some manpower costs. Just to review, here are the steps we've taken so far:

1. We customized the cost file to include manpower costs that are appropriate to this analysis.
2. We deselected certain elements and modified how others are aggregated.
3. We built units that represent the manpower suites that we want to analyze.
4. We aggregated the units into a platform that represents the life cycle of a ship, a squadron, a ship class, etc.

Now we pull it all together in a project.

Run LCC

- ❑ Under the **LCC** menu, select *Run LCC*.



Now we're looking at the main project screen. This screen displays the **LCC Parameters**, including inflation rates by appropriation category and year, the discount rate and the duration of analysis. The LCC is bound by both duration of analysis and the number of years in the underlying requirements file. It will use the minimum of the two.

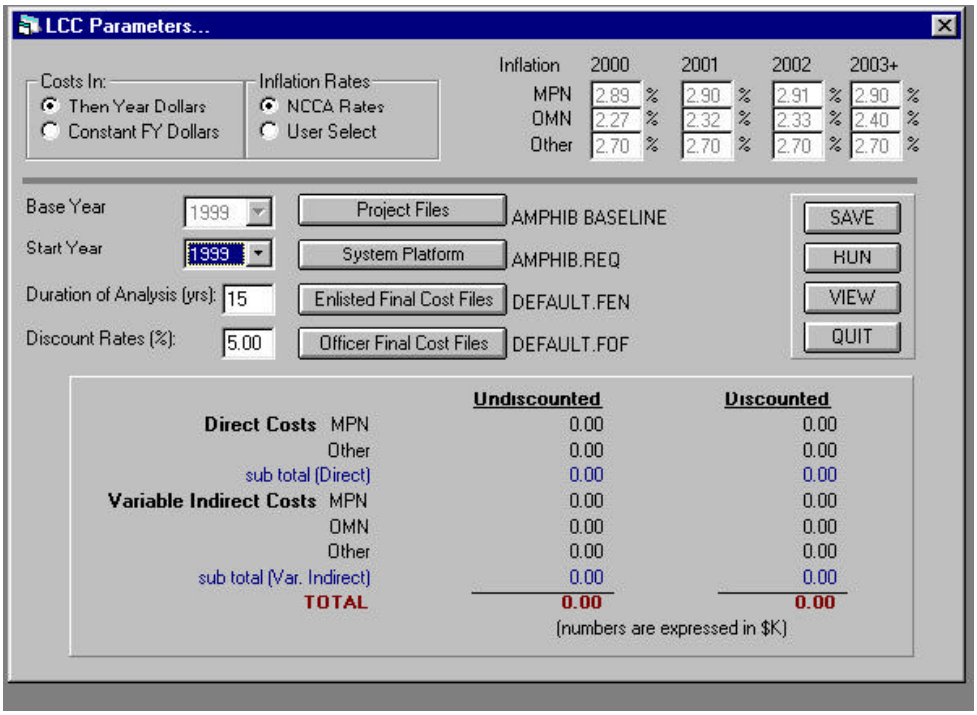
In addition to these LCC parameters, there are a number of switches controlling how the LCC analysis handles inflation. In the upper left corner of the screen are switches that control initial inflation and "outyear" inflation across the project. These switches will remain dimmed until you select a project. The first set of switches allow you to choose either **Then Year Dollars** or **Constant FY Dollars**. In the first case, costs will be inflated across the project; in the second, costs will be adjusted to the base year level and will remain constant for every year in the life cycle.

The second set of switches (which are activated only if you choose **Then Year Dollars**) allow you to use either NCCA inflation rates (embedded in the model) or user-specified inflation rates. If you choose the automatic inflation method, COMET will display the inflation rates to be used by appropriation category.

Finally, the user may set the **Start Year** and the **Base Year**. **Base Year** is used only when you select the **Constant FY Dollars** inflation option. **Start Year** signifies the first year of the project life cycle.

Let's look at an existing project file.

- ❑ Click the *Project Files* button in the middle of the screen, select *AMPHIB BASELINE* from the list presented, and click *OK*.

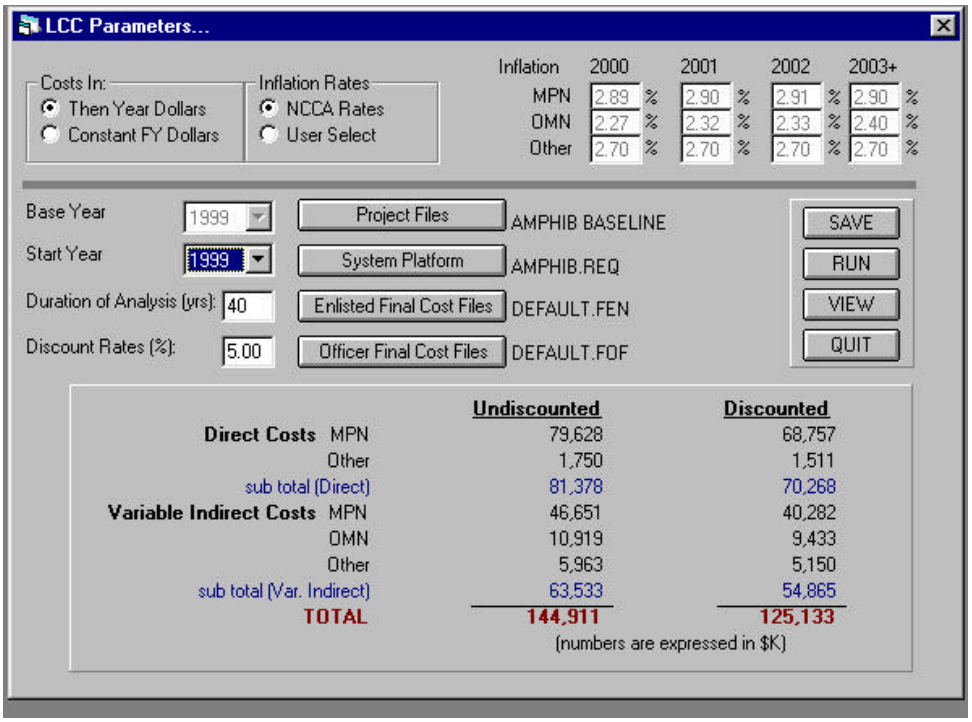


As you can see, in addition to the **LCC Parameters**, this project already has a system platform file (**AMPHIB.REQ**) and two cost files associated (**DEFAULT.FEN** and **DEFAULT.FOF**). This project will compute life cycle costs in **Then Year Dollars**, starting in FY 1999. NCCA inflation rates will be employed, and outyear costs will be discounted at 5%.[3]

- ❑ Change the duration of analysis to *40* years to reflect the changes we just made to the platform file.
- ❑ Click *SAVE* and then click *RUN*.

Since COMET is now calculating 40 years for a lot of different manpower, this will take a few minutes.

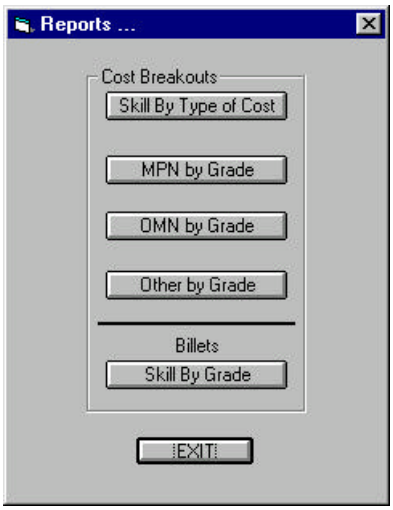
[3] The discount rate is a measure of the time value of money. It is the periodic rate at which outyear costs are discounted (or devalued). The discounted stream of costs is often referred to as the *Present Value.* A payment or cost of $100 one period in the future has a present value (at a 5% discount rate) of $95.24.



On the resulting screen, we can see the summary output: about $145 million in undiscounted dollars. Discounted, the manpower will cost about $125 million. COMET allows you to see even more detail, though.

❑ Click the *VIEW* button. You have five options for viewing detailed output:

1. Skill by Type of Cost
2. MPN by Grade
3. OMN by Grade
4. Other by Grade
5. Billets (Skill by Grade)



Let's look at the first report.

- ❑ Click the *Skill by Type of Cost* button.

This is an extremely detailed breakout of the costs. At the very top are the run parameters. This creates an audit trail if you need to go back and run an analysis in the future. As you scroll down, you'll see the summary output repeated, followed by costs broken out by year, unit and rating/designator.

In addition to viewing the output, you can also **Print** or **Export** the output from this point.

- ❑ To export the data, from the **File** menu, select *Export*.

COMET will now create a comma-delimited text file that you can easily import into Excel. The file name defaults to **"project name".csv,** but you can change it to any name.

- ❑ Click *Save*, then click on the *X* in the top right corner of the **View Text** screen to exit and return to the **LCC Parameters** screen.
- ❑ To view the other reports, click the *VIEW* button again and select a different report.

Now we're going to make a new project.

- ❑ From the **LCC Parameters** screen, click *Project Files.*
- ❑ From the **Project Listings** dialog box, select *Create New Project*.
- ❑ In the pop-up box, name the new project *COMBAT BASELINE.* DO NOT type in a file extension.
- ❑ Select the new file (*COMBAT BASELINE*) and click *OK*.

Now associate the requirements file **COMBATDIV** with this project.

- ❑ Click the *System Platform* button and select *COMBATDIV.REQ* from the list presented. Click *OK*.
- ❑ Change the project duration (**Duration of Analysis** box) to 1 year.
- ❑ Click *Save* and then click *Run*.

Since COMET is only calculating 1 year of data, this will only take a few seconds.

- ❑ Now click the *Project Files* button.
- ❑ From the **Project Listings** dialog box, select *COMBAT BASELINE,* and then click *Duplicate Existing Project*.
- ❑ In the pop-up box, type in the name *COMBAT ALTERNATIVE* and click *OK*.
- ❑ Click *Yes* to verify the action in the pop-up box.

You are now returned to the **LCC Parameters** screen.

- ❑ Click the *System Platform* button and select *COMBATDIV2.REQ* from the list presented. Click *OK*.
- ❑ From the **LCC Parameters** screen, click *Save* and then click *Run*.

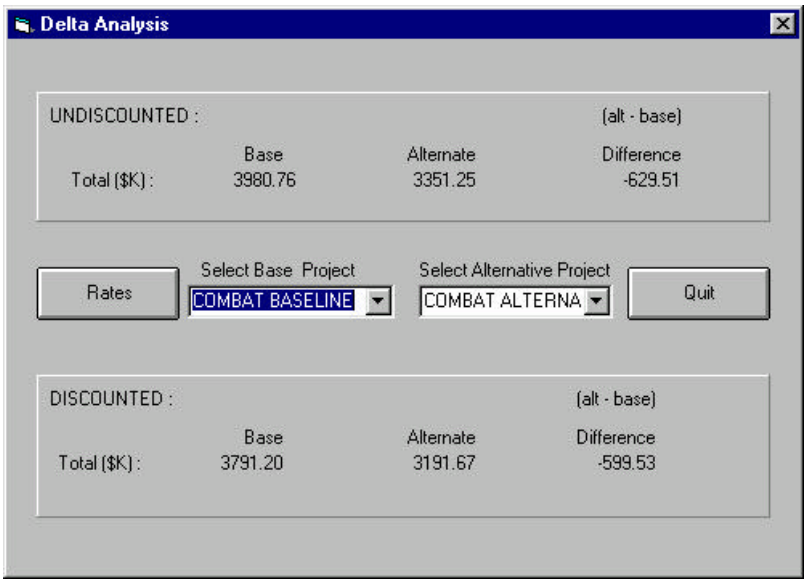
Again, since COMET is only calculating 1 year of data, this will only take a few seconds.

- ❑ Click the *Quit* button to exit and return to the blank **COMET Active Component** screen.

Delta Analysis

We have one more feature to examine under the **LCC** menu– the **Delta Analysis**. This feature is a "quick look" comparison between the results of two different project files.

- ❑ Under the **LCC** menu, select *Delta Analysis.*
- ❑ Now select both a base project in the first drop-down box and an alternative project in the second drop-down box. For this exercise, use the two COMBAT projects we just made (**COMBAT BASELINE** and **COMBAT ALTERNATIVE**).



- ❑ You can also click the *Rates* button to compare the LCC parameters.
- ❑ Click *Quit* to exit and return to the blank **COMET Active Component** screen.

The Help Menu

The **Help** menu provides topical information on the COMET Active Component software. Context-sensitive help is available anywhere in the model by pressing the *F1* key.

Sample Manpower Cost Drill

This section presents an example of a typical manpower cost drill. This drill will illustrate the functions learned in the preceding tutorial.

The Problem

You are a cost analyst during the design phase of a new Navy ship. Various hardware alternatives are being considered and your job is to report the manpower O&S costs of each alternative. Currently, your team is focusing on functions and equipment affecting the Combat Systems Department. Under the current configuration, you have built units corresponding to the six divisions within the department. The unit files are listed in Table 1 and are already located in the default list of units in the COMET model.

Table 1: Baseline Manpower

Division	***Unit File***	Multiple
CD	CD.DAT	1
CE	CE.DAT	1
CI	CI.DAT	1
CX	CX.DAT	1
CG	CG.DAT	1
CM	CM.DAT	1

This baseline does not require any advanced training.

A new configuration of equipment is under consideration. It will cost $1.5 million more in procurement dollars per ship. It has no impact on non-manpower O&S costs. The new equipment will allow you to eliminate all DS billets from the CX division. Additionally, the number of ET billets in the CE division can be reduced as shown in Table 2.[4] While overall manpower requirements are reduced, both DSs and ETs will require advanced training. DSs in paygrades E5 and above must carry NEC 1673. ETs in E5 and above must carry NEC 1511.

Table 2: Change in ET Manning (CE Division)

Paygrade	Baseline Billets	New Billets	D
E4	5	3	-2
E5	2	2	0
E6	1	0	-1
E7	1	1	0

[4] Assume that all manning analysis has taken into account watch stations, collateral duty, etc.

The life cycle for a single ship is 40 years, beginning in FY 2000. Using a 5.00% discount rate and the model-supplied inflation rates, determine whether the alternative configuration of equipment represents a net savings over the baseline.

Getting Started

One of the most common questions that new COMET users have is how to set up a problem, i.e., which features must they use and in what order. This section provides a process for starting that can be followed for virtually any type of manpower cost drill.

Analyze the Problem

- How many projects will I need to develop? How many different scenarios am I analyzing?

  In the sample manning problem below, we want to compare the existing manpower configuration to one new alternative; therefore, we'll develop two different projects (a baseline and an alternative).

- How many units will each system platform need to contain to do the analysis? What do these units look like (how many people by skill and grade)?

  For this drill, the level of analysis is one department. The platform represents the manning of this department and is comprised (in the baseline) of six units representing each division within the department. The alternative requires the same number and type of units; however, two units (CX and CE) are affected by the changes. We will have to create new versions of these units.

- Do I need to develop a new cost file for any of the projects or will the default costs work? Do I need to add special training, add or delete special/incentive pays, or deselect non-Navy costs or indirect costs?

  The baseline case does not require any modifications to the cost settings. In this case, it is appropriate to use the default cost files in the analysis. However, the advanced training requirement for some enlisted skills in the alternative scenario means that a new enlisted cost file is necessary.

Build New Cost Files (If Needed)

- What changes from the default cost file are needed to emulate the situation I am trying to analyze?

  1. Under the **Edit** menu, select or create the enlisted or officer cost file needed.
  2. Select and deselect cost elements.
  3. Edit those items identified above.

Build Units Needed for Each Project

- Can some units be used in more than one project?

Since most of the divisions in our problem are unaffected by the proposed change, their manpower units can be used in both the baseline and the alternative. However, new units are necessary for both the CX and CE divisions.

Build System Platform for Each Project

- Which units do I need for each project? How many do I need in each year of the analysis?

  The system platform is constructed by determining how many of each type of unit is necessary for a given scenario and for how many years. For both the baseline and the alternative, the life cycle is 40 years, and includes six units in each year.

Build Project File for Each Project

The project file ties together all of the elements you have created for the manning drill. The baseline and the alternative will each have a separate project file. Settings and output will be saved with the project.

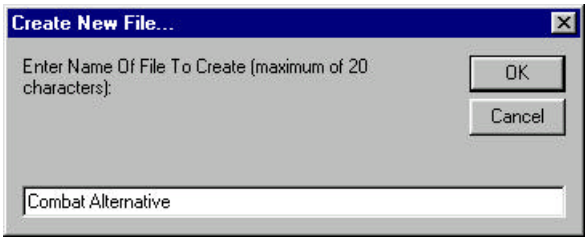
Use Delta Analysis Option under LCC to Compare Projects

The total costs of the baseline and the alternative can be compared using the Delta Analysis option.

Step 1: Create a Custom Enlisted Cost File

The alternative scenario requires some advanced training that was not required in the baseline. The first step, then, is to create a new enlisted cost file for the alternative that reflects these additional costs.

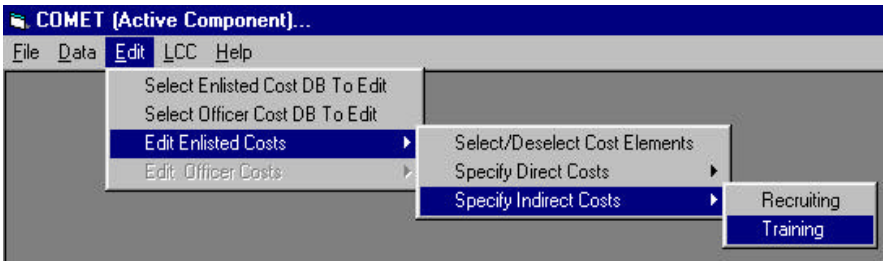
- Select *Edit/Select Enlisted Cost DB to Edit.*
- Click the *Create New Enlisted Cost File* button.
- Name the new cost file *Combat Alternative*.



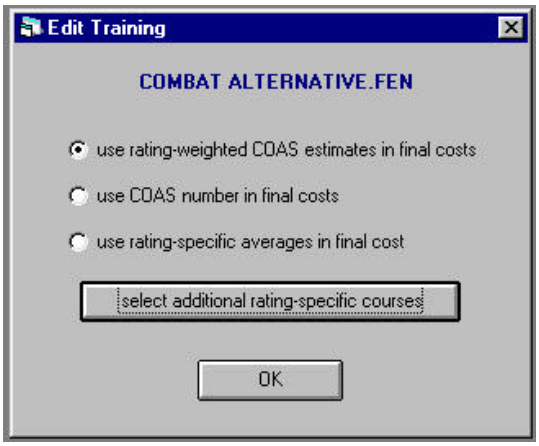
- Click *OK*.
- Select *COMBAT ALTERNATIVE.FEN* from the list of **Unit Files** and click *OK*.

You are now back at the **COMET Active Component** (blank) main menu display. We're ready to customize enlisted costs.

- Select *Edit/Edit Enlisted Costs/Specify Indirect Costs/Training*.



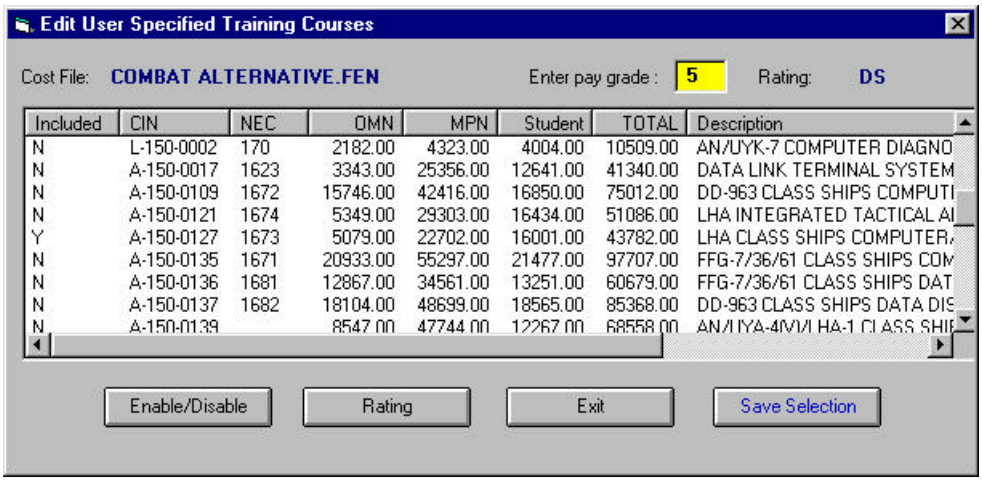
- Click the *select additional rating-specific courses* button.



- Click on the *Rating* button and select *DS Data Systems Technician*.

COMET displays the list of available courses. Scroll down until you find course number **A-150-0127**, which awards the required NEC (1673).

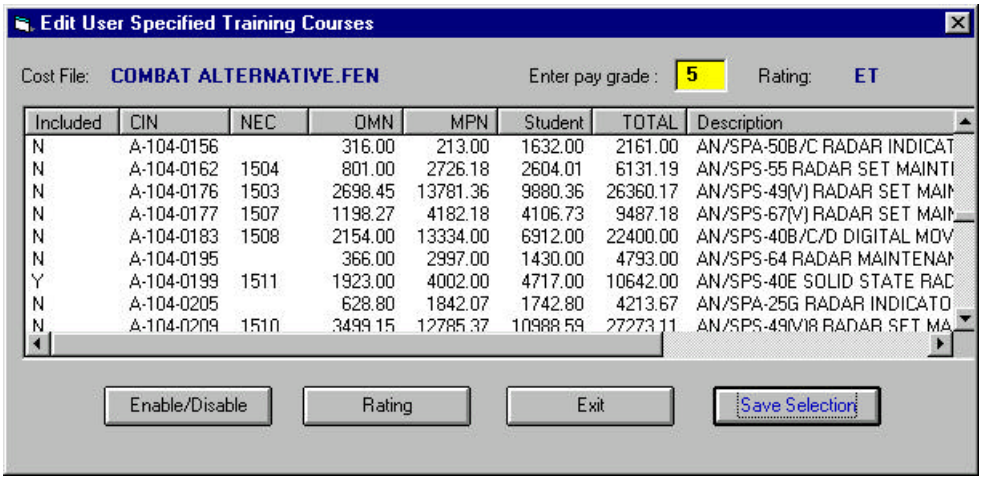
- Select this course by clicking on the *N* in the first column.
- Click the *Enable/Disable* button and the **N** becomes a **Y**.
- Type *5* into the **Enter pay grade** box at the top of the screen, since the training is required in paygrades E-5 and above.
- Click on the *Save Selection* button.



- Next, select *ET Electronics Technician* from the rating list.

Scroll down the course list until you find course number **A-104-0199**, which awards NEC 1511.

- *Enable* this course and **Enter pay grade** *5*.



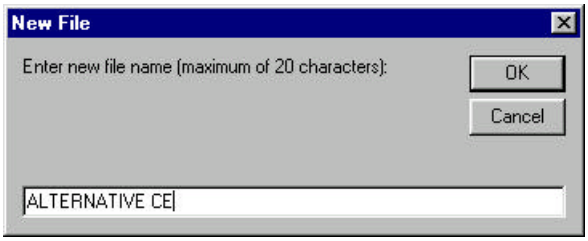
- Click *Save Selection*.
- We're finished modifying the training costs, so click *Exit*.
- Back at the **Edit Training** dialog box, click *OK*.

Step 2: Create New Unit Files

Now that we have all of the cost files we need, we have to create the necessary manpower units. All of the Combat Department units needed for the baseline scenario already exist; we only need to create the two new units that reflect the new manning under the alternative in the CX and CE divisions.

The easiest way to do this is to duplicate the existing CE and CX units and modify them, rather than creating new units from scratch. Make sure you don't modify the existing units—you'll need them for the baseline scenario.

- From the **COMET Active Component** main menu, select *LCC/Build Units.*
- Select *CE.DAT* from the **Unit File** list.
- Click the *Duplicate* button and name the new file *ALTERNATIVE CE.*



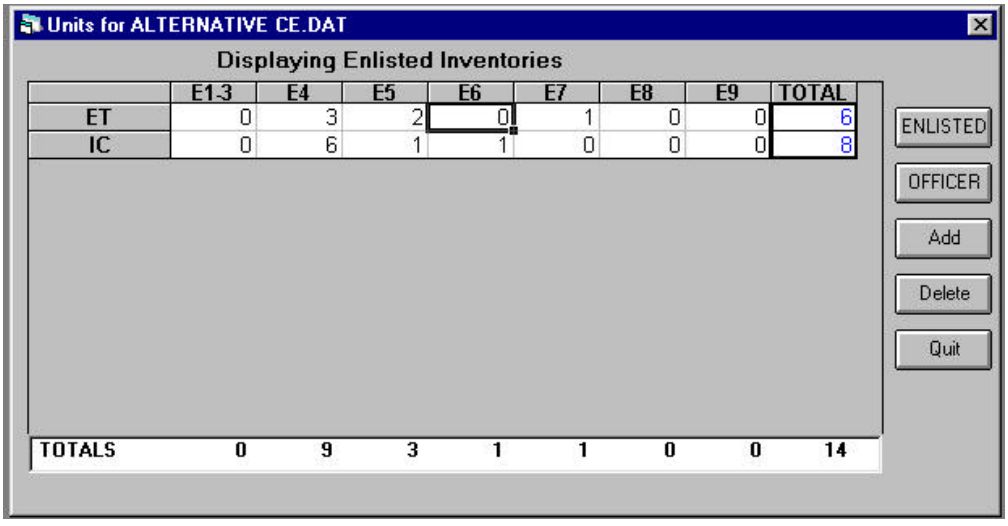
- Click *OK* and *YES* to verify the copy action. You may enter a description of the new unit (e.g., *Proposed new CE division manning*).

ALTERNATIVE CE.DAT now appears in the **Unit File** list.

- Select this unit and click *OK*.

Under the new configuration, we will reduce the number of ETs. Since the new unit is still an exact copy of the baseline, there are 5 E4s, 2 E5s, 1 E6 and 1 E7.

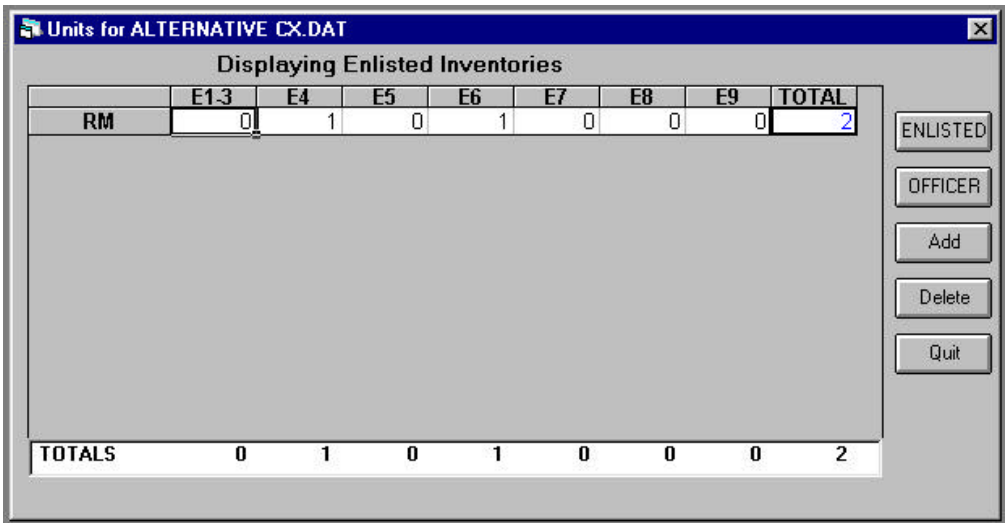
- Click in the E4 box in the ET row and enter a *3*. Repeat the process to change the E6 manning from **1** to **0**.



- Click *Quit* to exit.

Next, we'll do the same thing to create an alternative CX division unit file.

- From the **Unit File** list window, select *CX.DAT* and click the *Duplicate* button.
- Name the new unit *ALTERNATIVE CX*. After adding a description and saving, select the new file from the **Unit File** list and click *OK*.
- You could zero out the **DS** billets as we modified the CE manning, but the quicker route is to simply highlight the entire **DS** row (by clicking on the *DS* label) and clicking the *Delete* button.

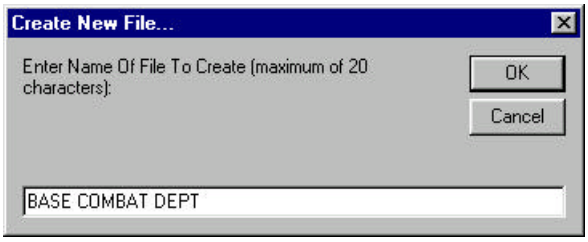


Now, the CX division only includes 2 RMs.

Step 3: Build System Platforms

The third step is to design two system platforms. One represents the baseline, while the other describes the alternative manning scheme. We'll begin with the baseline platform.

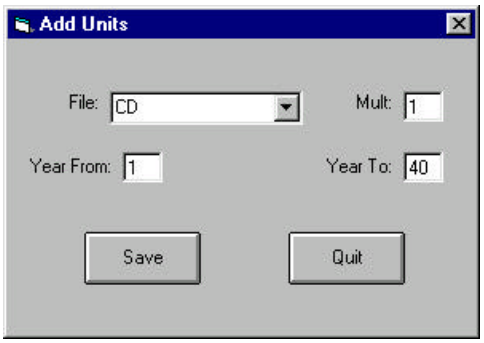
- Choose *LCC/Build System Platform*.
- In the **System Platform Files** window, click *Create New System Platform*.
- Name the new platform *BASE COMBAT DEPT*.



- Click *OK* to return to **System Platform Files** window.
- Select this file from the file list and click *OK*.

Units must be added one at a time. Begin with the CD unit.

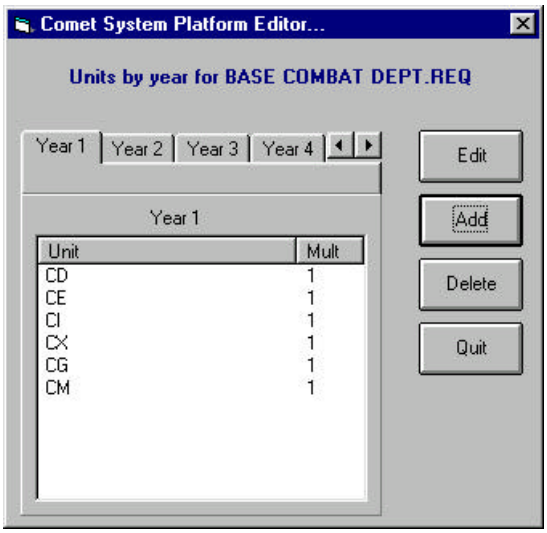
- Click the *Add* button.
- Select *CD* from the dropdown box, type *1* in the **Mult:** box, *1* in the **Year From:** box and *40* in the **Year To:** box.



We now have one CD unit for a 40-year life cycle.

- Click the *Save* button and the **System Platform Editor** display shows the **CD Unit** and multiple year tabs.
- Add the remaining five baseline units (*CE*, *CI*, *CX*, *CG* and *CM*) in the same manner. Make sure that you enter a multiple of *1* for each and specify years *1* through *40*.

When you are finished, the platform should look like this:



- Click *Quit* to exit the **System Platform Editor**.

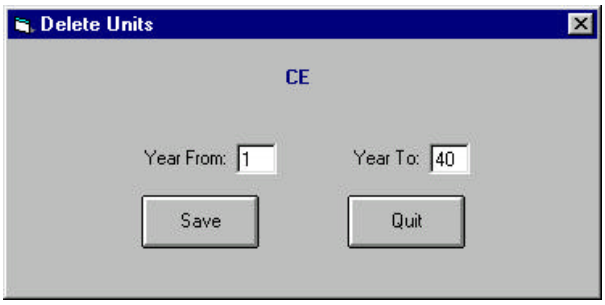
Next, we have to create an alternative system platform. Once again, it will be easier to copy and modify the baseline platform than to create a brand-new platform.

- Select *LCC/Build System Platform* and click on *BASE COMBAT DEPT.REQ* to select it.
- Click the *Duplicate System Platform* button to create a copy.
- Name the new platform *ALT COMBAT DEPT*.
- Click *OK* to return to **System Platform Files** window.
- Select this file from the file list and click *OK*.

Before adding the new CE and CX divisions, delete the originals.

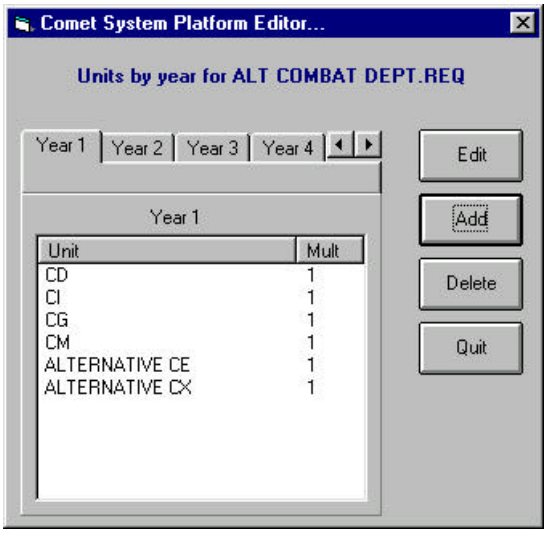
- Select the *CE* unit and click the *Delete* button.

- Enter *1* for **Year From** and *40* for ***Year To***.



- Click *Save*.
- Repeat the process to eliminate the **CX** unit.

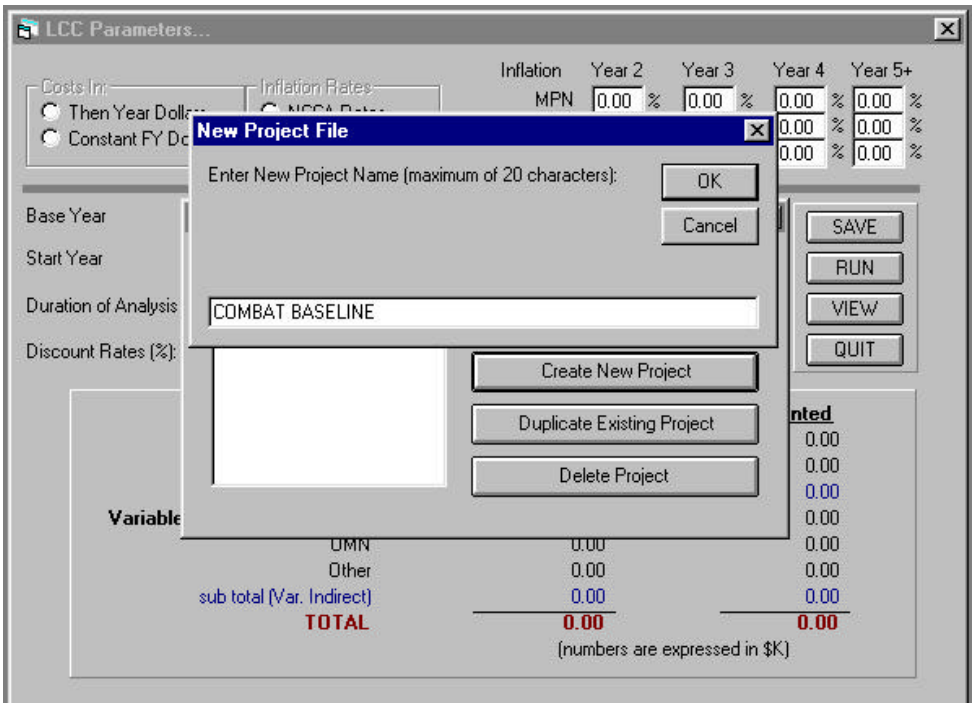
Finally, add the two new units (**ALTERNATIVE CE** and **ALTERNATIVE CX**) using the procedure described above. Make sure to use a multiplier of 1 and to include both units for the entire 40-year project life. When you are finished, the **System Platform Editor** should look like this:



Step 4: Create Projects

With the two alternative platforms completed, we are ready to construct the projects. We'll begin with the baseline project.

- Choose *LCC/Run LCC*. On the **LCC Parameters** screen, click the *Project Files* button.
- Click the *Create New Project* button and name the new project *COMBAT BASELINE*.

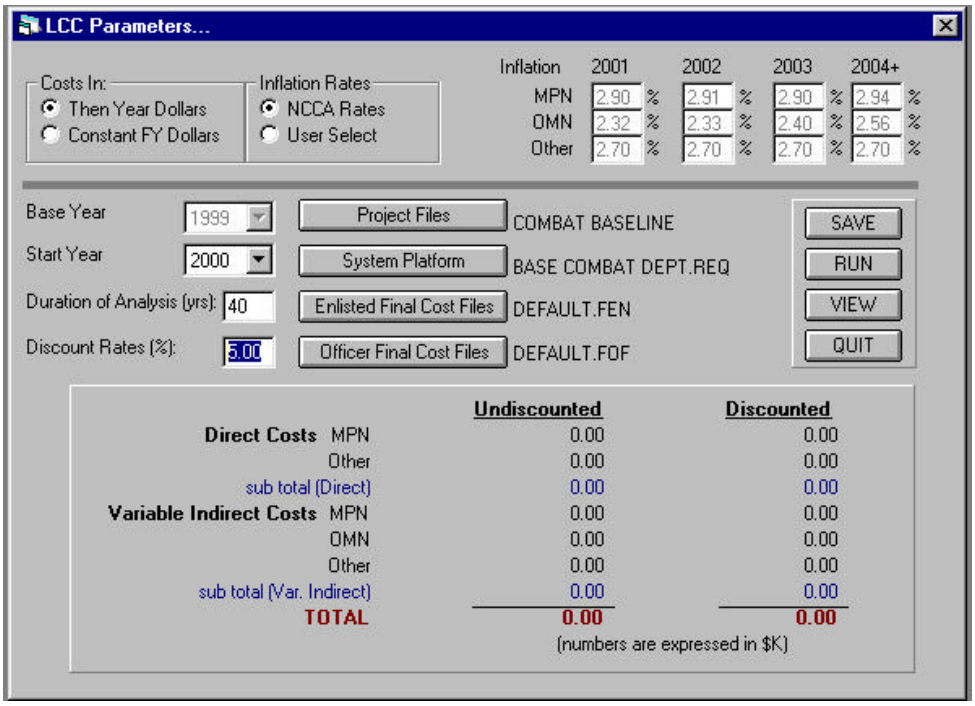


- Click *OK* to return to the **LCC Parameters** screen.

Next, we'll set the LCC parameters.

- First, set the inflation scenario switches to choose **Costs In** *Then Year Dollars* and *NCCA Inflation Rates*.
- Select a **Start Year** of *2000* from the drop-down box.
- Set the **Duration of Analysis** to *40* years and the **Discount Rate** to *5.00%*.
- Click the *System Platform Button* and choose *BASE COMBAT DEPT.REQ* from the file list.

The cost files should already be set to **DEFAULT.FEN** and **DEFAULT.FOF**. Make sure that your settings look like this:



- When you are ready, click the *SAVE* button to save all of the project settings. Finally, click *RUN*.

Total Undiscounted and **Discounted** costs are displayed. The undiscounted cost of the platform is $285,949,000 and the discounted cost is $102,390,000.

The alternative project remains.

- To start, click on the *Project* button and *Duplicate* **COMBAT BASELINE**.
- Name the new project *COMBAT ALTERNATIVE*.
- Select this file and click *OK* to edit it.

Since all of the run parameters will remain the same, we only need to change two items. First, select the proper platform file.

- Click the *System Platform* button and then choose *ALT COMBAT DEPT.REQ*.
- Click the *Enlisted Final Cost Files* button.
- Choose *COMBAT ALTERNATIVE.FEN*.
- Click *SAVE* and *RUN*.

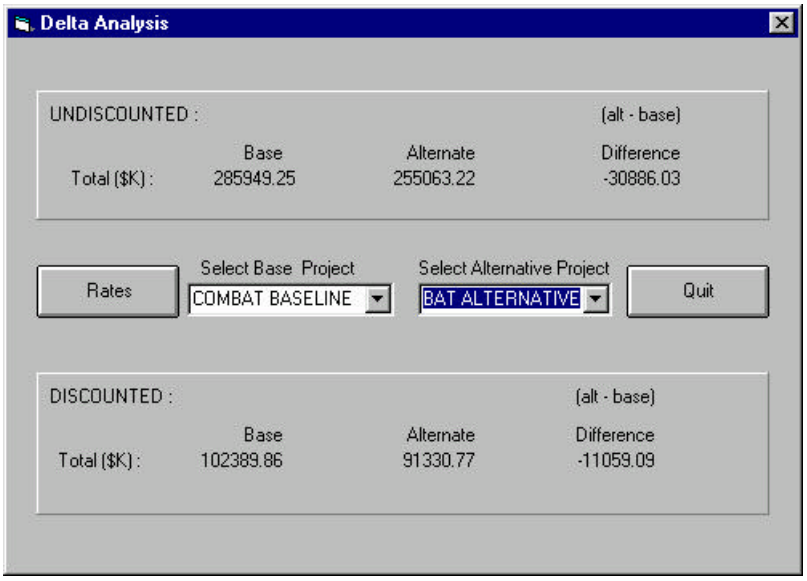
This run will take longer than the baseline because the enlisted cost file needs to be recalculated to incorporated its new settings.

The undiscounted cost of the platform is $255,063,000 and the discounted cost is $91,331,000.

Step 5: Compare Costs

Now that we have run the baseline and the alternative scenarios, we can compare their life cycle costs.

- To do so, choose *LCC/Delta Analysis.*
- In the drop-down box labeled **Select Base Project** choose *COMBAT BASELINE.*
- In the drop-down box labeled **Select Alternative Project** choose *COMBAT ALTERNATIVE*.



The Delta screen shows that the alternative configuration reduces total life-cycle manpower costs by about $30.9 million. The discounted difference is $11.1 million. This savings more than justifies an additional hardware expense of $1.5 million.

References

For more information about COMET, access the Naval Center for Cost Analysis web page at:

http://www.ncca.navy.mil/comet/index.html

At this site you will find:

- What is COMET?

  Background material and history of the program

- COMET Toolbox

  Slide briefs, CNA studies, statistics, and other tools

- COMET Glossary
- Download Area

Comments about COMET may be submitted through the web page or to CDR Mark Dye, 703-604-0289, dye.mark@ncca.navy.mil